

SEQUENCE LISTING

<110> McCarthy, Sean A
Fraser, Christopher C
Sharp, John D
Barnes, Thomas M

<120> NOVEL GENES ENCODING PROTEINS HAVING DIAGNOSTIC,
PREVENTIVE, THERAPEUTIC, AND OTHER USES

<130> 10147-6

<140> Not Yet Assigned

<141> 1999-06-14

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<170> PatentIn Ver. 2.0

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<212> DNA

<213> Homo sapiens

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Gln His Pro Tyr Asn Thr Leu Lys Tyr Pro Asn Gly Glu Gly Gly Leu
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Gly Glu His Asn Tyr Cys Arg Asn Pro Asp Gly Asp Val Ser Pro Trp
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Cys Tyr Val Ala Glu His Glu Asp Gly Val Tyr Trp Lys Tyr Cys Glu
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Ile Pro Ala Cys Gln Met Pro Gly Asn Leu Gly Cys Tyr Lys Asp His
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Gly Asn Pro Pro Pro Leu Thr Gly Thr Ser Lys Thr Ser Asn Lys Leu
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Thr Ile Gln Thr Cys Ile Ser Phe Cys Arg Ser Gln Arg Phe Lys Phe
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Tyr Trp Lys Tyr Gly Glu Ala Ala Ser Thr Glu Cys Asn Ser Val Cys
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Phe Asp Thr Leu Val Gly Ala Cys Gly Gly Asn Tyr Ser Ala Met Ser
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Ser Val Val Tyr Ser Pro Asp Phe Pro Asp Thr Tyr Ala Thr Gly Arg
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Val Cys Tyr Trp Thr Ile Arg Val Pro Gly Ala Ser His Ile His Phe
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Ser Phe Pro Leu Phe Asp Ile Arg Asp Ser Ala Asp Met Val Glu Leu
 260 265 270

Leu Asp Gly Tyr Thr His Arg Val Leu Ala Arg Phe His Gly Arg Ser
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Arg Pro Pro Leu Ser Phe Asn Val Ser Leu Asp Phe Val Ile Leu Tyr
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Phe Phe Ser Asp Arg Ile Asn Gln Ala Gln Gly Phe Ala Val Leu Tyr
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Gln Ala Val Lys Glu Glu Leu Pro Gln Glu Arg Pro Ala Val Asn Gln
 325 330 335

Thr Val Ala Glu Val Ile Thr Glu Gln Ala Asn Leu Ser Val Ser Ala
 340 345 350

Ala Arg Ser Ser Lys Val Leu Tyr Val Ile Thr Thr Ser Pro Ser His
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Pro Pro Gln Thr Val Pro Gly Ser Asn Ser Trp Ala Pro Pro Met Gly
 370 375 380

Ala Gly Ser His Arg Val Glu Gly Trp Thr Val Tyr Gly Leu Ala Thr
 385 390 395 400

Leu Leu Ile Leu Thr Val Thr Ala Ile Val Ala Lys Ile Leu Leu His
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Val Thr Phe Lys Ser His Arg Val Pro Ala Ser Gly Asp Leu Arg Asp
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Cys His Gln Pro Gly Thr Ser Gly Glu Ile Trp Ser Ile Phe Tyr Lys
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Pro Ser Thr Ser Ile Ser Ile Phe Lys Lys Lys Leu Lys Gly Gln Ser
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 35 40 45

Tyr Asn Thr Leu Lys Tyr Pro Asn Gly Glu Gly Gly Leu Gly Glu His
 50 55 60

Asn Tyr Cys Arg Asn Pro Asp Gly Asp Val Ser Pro Trp Cys Tyr Val
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Ala Glu His Glu Asp Gly Val Tyr Trp Lys Tyr Cys Glu Ile Pro Ala
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Cys Gln Met Pro Gly Asn Leu Gly Cys Tyr Lys Asp His Gly Asn Pro
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Pro Pro Leu Thr Gly Thr Ser Lys Thr Ser Asn Lys Leu Thr Ile Gln
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Thr Cys Ile Ser Phe Cys Arg Ser Gln Arg Phe Lys Phe Ala Gly Met
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Glu Ser Gly Tyr Ala Cys Phe Cys Gly Asn Asn Pro Asp Tyr Trp Lys
 145 150 155 160

Tyr Gly Glu Ala Ala Ser Thr Glu Cys Asn Ser Val Cys Phe Gly Asp
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His Thr Gln Pro Cys Gly Gly Asp Gly Arg Ile Ile Leu Phe Asp Thr
 180 185 190

Leu Val Gly Ala Cys Gly Gly Asn Tyr Ser Ala Met Ser Ser Val Val
 195 200 205

Tyr Ser Pro Asp Phe Pro Asp Thr Tyr Ala Thr Gly Arg Val Cys Tyr
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Trp Thr Ile Arg Val Pro Gly Ala Ser His Ile His Phe Ser Phe Pro
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Leu Phe Asp Ile Arg Asp Ser Ala Asp Met Val Glu Leu Leu Asp Gly
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Tyr Thr His Arg Val Leu Ala Arg Phe His Gly Arg Ser Arg Pro Pro
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Leu Ser Phe Asn Val Ser Leu Asp Phe Val Ile Leu Tyr Phe Phe Ser
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Asp Arg Ile Asn Gln Ala Gln Gly Phe Ala Val Leu Tyr Gln Ala Val
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Lys Glu Glu Leu Pro Gln Glu Arg Pro Ala Val Asn Gln Thr Val Ala
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Glu Val Ile Thr Glu Gln Ala Asn Leu Ser Val Ser Ala Ala Arg Ser
 325 330 335

Ser Lys Val Leu Tyr Val Ile Thr Thr Ser Pro Ser His Pro Pro Gln
 340 345 350

Thr Val Pro Gly Ser Asn Ser Trp Ala Pro Pro Met Gly Ala Gly Ser
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His Arg Val Glu Gly Trp Thr Val Tyr Gly Leu Ala Thr Leu Leu Ile
 370 375 380

Leu Thr Val Thr Ala Ile Val Ala Lys Ile Leu Leu His Val Thr Phe
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Lys Ser His Arg Val Pro Ala Ser Gly Asp Leu Arg Asp Cys His Gln
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Pro Gly Thr Ser Gly Glu Ile Trp Ser Ile Phe Tyr Lys Pro Ser Thr
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Trp Thr Ile Arg Val Pro Gly Ala Ser His Ile His Phe Ser Phe Pro
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Leu Phe Asp Ile Arg Asp Ser Ala Asp Met Val Glu Leu Leu Asp Gly
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Tyr Thr His Arg Val Leu Ala Arg Phe His Gly Arg Ser Arg Pro Pro
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Leu Ser Phe Asn Val Ser Leu Asp Phe Val Ile Leu Tyr Phe Phe Ser
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Asp Arg Ile Asn Gln Ala Gln Gly Phe Ala Val Leu Tyr Gln Ala Val
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Lys Glu Glu Leu Pro Gln Glu Arg Pro Ala Val Asn Gln Thr Val Ala
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Glu Val Ile Thr Glu Gln Ala Asn Leu Ser Val Ser Ala Ala Arg Ser
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Ser Lys Val Leu Tyr Val Ile Thr Thr Ser Pro Ser His Pro Pro Gln
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Thr Val Pro Gly Ser Asn Ser Trp Ala Pro Pro Met Gly Ala Gly Ser
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His Arg Val Glu Gly
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<213> Homo sapiens

<400> 10

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<210> 11

<211> 1453

<212> PRT

<213> Homo sapiens

<400> 11

Met Met Leu Pro Gln Asn Ser Trp His Ile Asp Phe Gly Arg Cys Cys

1

5

10

15

Cys His Gln Asn Leu Phe Ser Ala Val Val Thr Cys Ile Leu Leu Leu

20

25

30

Asn	Ser	Cys	Phe	Leu	Ile	Ser	Ser	Phe	Asn	Gly	Thr	Asp	Leu	Glu	Leu	35	40	45	
Arg	Leu	Val	Asn	Gly	Asp	Gly	Pro	Cys	Ser	Gly	Thr	Val	Glu	Val	Lys	50	55	60	
Phe	Gln	Gly	Gln	Trp	Gly	Thr	Val	Cys	Asp	Asp	Gly	Trp	Asn	Thr	Thr	65	70	75	80
Ala	Ser	Thr	Val	Val	Cys	Lys	Gln	Leu	Gly	Cys	Pro	Phe	Ser	Phe	Ala	85	90	95	
Met	Phe	Arg	Phe	Gly	Gln	Ala	Val	Thr	Arg	His	Gly	Lys	Ile	Trp	Leu	100	105	110	
Asp	Asp	Val	Ser	Cys	Tyr	Gly	Asn	Glu	Ser	Ala	Leu	Trp	Glu	Cys	Gln	115	120	125	
His	Arg	Glu	Trp	Gly	Ser	His	Asn	Cys	Tyr	His	Gly	Glu	Asp	Val	Gly	130	135	140	
Val	Asn	Cys	Tyr	Gly	Glu	Ala	Asn	Leu	Gly	Leu	Arg	Leu	Val	Asp	Gly	145	150	155	160
Asn	Asn	Ser	Cys	Ser	Gly	Arg	Val	Glu	Val	Lys	Phe	Gln	Glu	Arg	Trp	165	170	175	
Gly	Thr	Ile	Cys	Asp	Asp	Gly	Trp	Asn	Leu	Asn	Thr	Ala	Ala	Val	Val	180	185	190	
Cys	Arg	Gln	Leu	Gly	Cys	Pro	Ser	Ser	Phe	Ile	Ser	Ser	Gly	Val	Val	195	200	205	
Asn	Ser	Pro	Ala	Val	Leu	Arg	Pro	Ile	Trp	Leu	Asp	Asp	Ile	Leu	Cys	210	215	220	
Gln	Gly	Asn	Glu	Leu	Ala	Leu	Trp	Asn	Cys	Arg	His	Arg	Gly	Trp	Gly	225	230	235	240
Asn	His	Asp	Cys	Ser	His	Asn	Glu	Asp	Val	Thr	Leu	Thr	Cys	Tyr	Asp	245	250	255	
Ser	Ser	Asp	Leu	Glu	Leu	Arg	Leu	Val	Gly	Gly	Thr	Asn	Arg	Cys	Met	260	265	270	
Gly	Arg	Val	Glu	Leu	Lys	Ile	Gln	Gly	Arg	Trp	Gly	Thr	Val	Cys	His	275	280	285	

His Lys Trp Asn Asn Ala Ala Ala Asp Val Val Cys Lys Gln Leu Gly
 290 295 300

Cys Gly Thr Ala Leu His Phe Ala Gly Leu Pro His Leu Gln Ser Gly
 305 310 315 320

Ser Asp Val Val Trp Leu Asp Gly Val Ser Cys Ser Gly Asn Glu Ser
 325 330 335

Phe Leu Trp Asp Cys Arg His Ser Gly Thr Val Asn Phe Asp Cys Leu
 340 345 350

His Gln Asn Asp Val Ser Val Ile Cys Ser Asp Gly Ala Asp Leu Glu
 355 360 365

Leu Arg Leu Ala Asp Gly Ser Asn Asn Cys Ser Gly Arg Val Glu Val
 370 375 380

Arg Ile His Glu Gln Trp Trp Thr Ile Cys Asp Gln Asn Trp Lys Asn
 385 390 395 400

Glu Gln Ala Leu Val Val Cys Lys Gln Leu Gly Cys Pro Phe Ser Val
 405 410 415

Phe Gly Ser Arg Arg Ala Lys Pro Ser Asn Glu Ala Arg Asp Ile Trp
 420 425 430

Ile Asn Ser Ile Ser Cys Thr Gly Asn Glu Ser Ala Leu Trp Asp Cys
 435 440 445

Thr Tyr Asp Gly Lys Ala Lys Arg Thr Cys Phe Arg Arg Ser Asp Ala
 450 455 460

Gly Val Ile Cys Ser Asp Lys Ala Asp Leu Asp Leu Arg Leu Val Gly
 465 470 475 480

Ala His Ser Pro Cys Tyr Gly Arg Leu Glu Val Lys Tyr Gln Gly Glu
 485 490 495

Trp Gly Thr Val Cys His Asp Arg Trp Ser Thr Arg Asn Ala Ala Val
 500 505 510

Val Cys Lys Gln Leu Gly Cys Gly Lys Pro Met His Val Phe Gly Met
 515 520 525

Thr Tyr Phe Lys Glu Ala Ser Gly Pro Ile Trp Leu Asp Asp Val Ser
 530 535 540

Cys Ile Gly Asn Glu Ser Asn Ile Trp Asp Cys Glu His Ser Gly Trp
545 550 555 560

Gly Lys His Asn Cys Val His Arg Glu Asp Val Ile Val Thr Cys Ser
565 570 575

Gly Asp Ala Thr Trp Gly Leu Arg Leu Val Gly Gly Ser Asn Arg Cys
580 585 590

Ser Gly Arg Leu Glu Val Tyr Phe Gln Gly Arg Trp Gly Thr Val Cys
595 600 605

Asp Asp Gly Trp Asn Ser Lys Ala Ala Ala Val Val Cys Ser Gln Leu
610 615 620

Asp Cys Pro Ser Ser Ile Ile Gly Met Gly Leu Gly Asn Ala Ser Thr
625 630 635 640

Gly Tyr Gly Lys Ile Trp Leu Asp Asp Val Ser Cys Asp Gly Asp Glu
645 650 655

Ser Asp Leu Trp Ser Cys Arg Asn Ser Gly Trp Gly Asn Asn Asp Cys
660 665 670

Ser His Ser Glu Asp Val Gly Val Ile Cys Ser Asp Ala Ser Asp Met
675 680 685

Glu Leu Arg Leu Val Gly Gly Ser Ser Arg Cys Ala Gly Lys Val Glu
690 695 700

Val Asn Val Gln Gly Ala Val Gly Ile Leu Cys Ala Asn Gly Trp Gly
705 710 715 720

Met Asn Ile Ala Glu Val Val Cys Arg Gln Leu Glu Cys Gly Ser Ala
725 730 735

Ile Arg Val Ser Arg Glu Pro His Phe Thr Glu Arg Thr Leu His Ile
740 745 750

Leu Met Ser Asn Ser Gly Cys Thr Gly Gly Glu Ala Ser Leu Trp Asp
755 760 765

Cys Ile Arg Trp Glu Trp Lys Gln Thr Ala Cys His Leu Asn Met Glu
770 775 780

Ala Ser Leu Ile Cys Ser Ala His Arg Gln Pro Arg Leu Val Gly Ala
785 790 795 800

Asp Met Pro Cys Ser Gly Arg Val Glu Val Lys His Ala Asp Thr Trp
805 810 815

Arg Ser Val Cys Asp Ser Asp Phe Ser Leu His Ala Ala Asn Val Leu
820 825 830

Cys Arg Glu Leu Asn Cys Gly Asp Ala Ile Ser Leu Ser Val Gly Asp
835 840 845

His Phe Gly Lys Gly Asn Gly Leu Thr Trp Ala Glu Lys Phe Gln Cys
850 855 860

Glu Gly Ser Glu Thr His Leu Ala Leu Cys Pro Ile Val Gln His Pro
865 870 875 880

Glu Asp Thr Cys Ile His Ser Arg Glu Val Gly Val Val Cys Ser Arg
885 890 895

Tyr Thr Asp Val Arg Leu Val Asn Gly Lys Ser Gln Cys Asp Gly Gln
900 905 910

Val Glu Ile Asn Val Leu Gly His Trp Gly Ser Leu Cys Asp Thr His
915 920 925

Trp Asp Pro Glu Asp Ala Arg Val Leu Cys Arg Gln Leu Ser Cys Gly
930 935 940

Thr Ala Leu Ser Thr Thr Gly Gly Lys Tyr Ile Gly Glu Arg Ser Val
945 950 955 960

Arg Val Trp Gly His Arg Phe His Cys Leu Gly Asn Glu Ser Leu Leu
965 970 975

Asp Asn Cys Gln Met Thr Val Leu Gly Ala Pro Pro Cys Ile His Gly
980 985 990

Asn Thr Val Ser Val Ile Cys Thr Gly Ser Leu Thr Gln Pro Leu Phe
995 1000 1005

Pro Cys Leu Ala Asn Val Ser Asp Pro Tyr Leu Ser Ala Val Pro Glu
1010 1015 1020

Gly Ser Ala Leu Ile Cys Leu Glu Asp Lys Arg Leu Arg Leu Val Asp
1025 1030 1035 1040

Gly Asp Ser Arg Cys Ala Gly Arg Val Glu Ile Tyr His Asp Gly Phe
1045 1050 1055

Trp Gly Thr Ile Cys Asp Asp Gly Trp Asp Leu Ser Asp Ala His Val
 1060 1065 1070

Val Cys Gln Lys Leu Gly Cys Gly Val Ala Phe Asn Ala Thr Val Ser
 1075 1080 1085

Ala His Phe Gly Glu Gly Ser Gly Pro Ile Trp Leu Asp Asp Leu Asn
 1090 1095 1100

Cys Thr Gly Thr Glu Ser His Leu Trp Gln Cys Pro Ser Arg Gly Trp
 1105 1110 1115 1120

Gly Gln His Asp Cys Arg His Lys Glu Asp Ala Gly Val Ile Cys Ser
 1125 1130 1135

Glu Phe Thr Ala Leu Arg Leu Tyr Ser Glu Thr Glu Thr Glu Ser Cys
 1140 1145 1150

Ala Gly Arg Leu Glu Val Phe Tyr Asn Gly Thr Trp Gly Ser Val Gly
 1155 1160 1165

Arg Arg Asn Ile Thr Thr Ala Ile Ala Gly Ile Val Cys Arg Gln Leu
 1170 1175 1180

Gly Cys Gly Glu Asn Gly Val Val Ser Leu Ala Pro Leu Ser Lys Thr
 1185 1190 1195 1200

Gly Ser Gly Phe Met Trp Val Asp Asp Ile Gln Cys Pro Lys Thr His
 1205 1210 1215

Ile Ser Ile Trp Gln Cys Leu Ser Ala Pro Trp Glu Arg Arg Ile Ser
 1220 1225 1230

Ser Pro Ala Glu Glu Thr Trp Ile Thr Cys Glu Asp Arg Ile Arg Val
 1235 1240 1245

Arg Gly Gly Asp Thr Glu Cys Ser Gly Arg Val Glu Ile Trp His Ala
 1250 1255 1260

Gly Ser Trp Gly Thr Val Cys Asp Asp Ser Trp Asp Leu Ala Glu Ala
 1265 1270 1275 1280

Glu Val Val Cys Gln Gln Leu Gly Cys Gly Ser Ala Leu Ala Ala Leu
 1285 1290 1295

Arg Asp Ala Ser Phe Gly Gln Gly Thr Gly Thr Ile Trp Leu Asp Asp
 1300 1305 1310

Met Arg Cys Lys Gly Asn Glu Ser Phe Leu Trp Asp Cys His Ala Lys
 1315 1320 1325

Pro Trp Gly Gln Ser Asp Cys Gly His Lys Glu Asp Ala Gly Val Arg
 1330 1335 1340

Cys Ser Gly Gln Ser Leu Lys Ser Leu Asn Ala Ser Ser Gly His Leu
 1345 1350 1355 1360

Ala Leu Ile Leu Ser Ser Ile Phe Gly Leu Leu Leu Leu Val Leu Phe
 1365 1370 1375

Ile Leu Phe Leu Thr Trp Cys Arg Val Gln Lys Gln Lys His Leu Pro
 1380 1385 1390

Leu Arg Val Ser Thr Arg Arg Arg Gly Ser Leu Glu Glu Asn Leu Phe
 1395 1400 1405

His Glu Met Glu Thr Cys Leu Lys Arg Glu Asp Pro His Gly Thr Arg
 1410 1415 1420

Thr Ser Asp Asp Thr Pro Asn His Gly Cys Glu Asp Ala Ser Asp Thr
 1425 1430 1435 1440

Ser Leu Leu Gly Val Leu Pro Ala Ser Glu Ala Thr Lys
 1445 1450

<210> 12

<211> 40

<212> PRT

<213> Homo sapiens

<400> 12

Met Met Leu Pro Gln Asn Ser Trp His Ile Asp Phe Gly Arg Cys Cys
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Cys His Gln Asn Leu Phe Ser Ala Val Val Thr Cys Ile Leu Leu Leu
 20 25 30

Asn Ser Cys Phe Leu Ile Ser Ser
 35 40

<210> 13

<211> 1413

<212> PRT

<213> Homo sapiens

<400> 13

Phe Asn Gly Thr Asp Leu Glu Leu Arg Leu Val Asn Gly Asp Gly Pro
1 5 10 15

Cys Ser Gly Thr Val Glu Val Lys Phe Gln Gly Gln Trp Gly Thr Val
20 25 30

Cys Asp Asp Gly Trp Asn Thr Thr Ala Ser Thr Val Val Cys Lys Gln
35 40 45

Leu Gly Cys Pro Phe Ser Phe Ala Met Phe Arg Phe Gly Gln Ala Val
50 55 60

Thr Arg His Gly Lys Ile Trp Leu Asp Asp Val Ser Cys Tyr Gly Asn
65 70 75 80

Glu Ser Ala Leu Trp Glu Cys Gln His Arg Glu Trp Gly Ser His Asn
85 90 95

Cys Tyr His Gly Glu Asp Val Gly Val Asn Cys Tyr Gly Glu Ala Asn
100 105 110

Leu Gly Leu Arg Leu Val Asp Gly Asn Asn Ser Cys Ser Gly Arg Val
115 120 125

Glu Val Lys Phe Gln Glu Arg Trp Gly Thr Ile Cys Asp Asp Gly Trp
130 135 140

Asn Leu Asn Thr Ala Ala Val Val Cys Arg Gln Leu Gly Cys Pro Ser
145 150 155 160

Ser Phe Ile Ser Ser Gly Val Val Asn Ser Pro Ala Val Leu Arg Pro
165 170 175

Ile Trp Leu Asp Asp Ile Leu Cys Gln Gly Asn Glu Leu Ala Leu Trp
180 185 190

Asn Cys Arg His Arg Gly Trp Gly Asn His Asp Cys Ser His Asn Glu
195 200 205

Asp Val Thr Leu Thr Cys Tyr Asp Ser Ser Asp Leu Glu Leu Arg Leu
210 215 220

Val Gly Gly Thr Asn Arg Cys Met Gly Arg Val Glu Leu Lys Ile Gln
225 230 235 240

Gly Arg Trp Gly Thr Val Cys His His Lys Trp Asn Asn Ala Ala Ala
 245 250 255

Asp Val Val Cys Lys Gln Leu Gly Cys Gly Thr Ala Leu His Phe Ala
 260 265 270

Gly Leu Pro His Leu Gln Ser Gly Ser Asp Val Val Trp Leu Asp Gly
 275 280 285

Val Ser Cys Ser Gly Asn Glu Ser Phe Leu Trp Asp Cys Arg His Ser
 290 295 300

Gly Thr Val Asn Phe Asp Cys Leu His Gln Asn Asp Val Ser Val Ile
 305 310 315 320

Cys Ser Asp Gly Ala Asp Leu Glu Leu Arg Leu Ala Asp Gly Ser Asn
 325 330 335

Asn Cys Ser Gly Arg Val Glu Val Arg Ile His Glu Gln Trp Trp Thr
 340 345 350

Ile Cys Asp Gln Asn Trp Lys Asn Glu Gln Ala Leu Val Val Cys Lys
 355 360 365

Gln Leu Gly Cys Pro Phe Ser Val Phe Gly Ser Arg Arg Ala Lys Pro
 370 375 380

Ser Asn Glu Ala Arg Asp Ile Trp Ile Asn Ser Ile Ser Cys Thr Gly
 385 390 395 400

Asn Glu Ser Ala Leu Trp Asp Cys Thr Tyr Asp Gly Lys Ala Lys Arg
 405 410 415

Thr Cys Phe Arg Arg Ser Asp Ala Gly Val Ile Cys Ser Asp Lys Ala
 420 425 430

Asp Leu Asp Leu Arg Leu Val Gly Ala His Ser Pro Cys Tyr Gly Arg
 435 440 445

Leu Glu Val Lys Tyr Gln Gly Glu Trp Gly Thr Val Cys His Asp Arg
 450 455 460

Trp Ser Thr Arg Asn Ala Ala Val Val Cys Lys Gln Leu Gly Cys Gly
 465 470 475 480

Lys Pro Met His Val Phe Gly Met Thr Tyr Phe Lys Glu Ala Ser Gly
 485 490 495

Pro Ile Trp Leu Asp Asp Val Ser Cys Ile Gly Asn Glu Ser Asn Ile
500 505 510

Trp Asp Cys Glu His Ser Gly Trp Gly Lys His Asn Cys Val His Arg
515 520 525

Glu Asp Val Ile Val Thr Cys Ser Gly Asp Ala Thr Trp Gly Leu Arg
530 535 540

Leu Val Gly Gly Ser Asn Arg Cys Ser Gly Arg Leu Glu Val Tyr Phe
545 550 555 560

Gln Gly Arg Trp Gly Thr Val Cys Asp Asp Gly Trp Asn Ser Lys Ala
565 570 575

Ala Ala Val Val Cys Ser Gln Leu Asp Cys Pro Ser Ser Ile Ile Gly
580 585 590

Met Gly Leu Gly Asn Ala Ser Thr Gly Tyr Gly Lys Ile Trp Leu Asp
595 600 605

Asp Val Ser Cys Asp Gly Asp Glu Ser Asp Leu Trp Ser Cys Arg Asn
610 615 620

Ser Gly Trp Gly Asn Asn Asp Cys Ser His Ser Glu Asp Val Gly Val
625 630 635 640

Ile Cys Ser Asp Ala Ser Asp Met Glu Leu Arg Leu Val Gly Gly Ser
645 650 655

Ser Arg Cys Ala Gly Lys Val Glu Val Asn Val Gln Gly Ala Val Gly
660 665 670

Ile Leu Cys Ala Asn Gly Trp Gly Met Asn Ile Ala Glu Val Val Cys
675 680 685

Arg Gln Leu Glu Cys Gly Ser Ala Ile Arg Val Ser Arg Glu Pro His
690 695 700

Phe Thr Glu Arg Thr Leu His Ile Leu Met Ser Asn Ser Gly Cys Thr
705 710 715 720

Gly Gly Glu Ala Ser Leu Trp Asp Cys Ile Arg Trp Glu Trp Lys Gln
725 730 735

Thr Ala Cys His Leu Asn Met Glu Ala Ser Leu Ile Cys Ser Ala His
740 745 750

Arg Gln Pro Arg Leu Val Gly Ala Asp Met Pro Cys Ser Gly Arg Val
755 760 765

Glu Val Lys His Ala Asp Thr Trp Arg Ser Val Cys Asp Ser Asp Phe
770 775 780

Ser Leu His Ala Ala Asn Val Leu Cys Arg Glu Leu Asn Cys Gly Asp
785 790 795 800

Ala Ile Ser Leu Ser Val Gly Asp His Phe Gly Lys Gly Asn Gly Leu
805 810 815

Thr Trp Ala Glu Lys Phe Gln Cys Glu Gly Ser Glu Thr His Leu Ala
820 825 830

Leu Cys Pro Ile Val Gln His Pro Glu Asp Thr Cys Ile His Ser Arg
835 840 845

Glu Val Gly Val Val Cys Ser Arg Tyr Thr Asp Val Arg Leu Val Asn
850 855 860

Gly Lys Ser Gln Cys Asp Gly Gln Val Glu Ile Asn Val Leu Gly His
865 870 875 880

Trp Gly Ser Leu Cys Asp Thr His Trp Asp Pro Glu Asp Ala Arg Val
885 890 895

Leu Cys Arg Gln Leu Ser Cys Gly Thr Ala Leu Ser Thr Thr Gly Gly
900 905 910

Lys Tyr Ile Gly Glu Arg Ser Val Arg Val Trp Gly His Arg Phe His
915 920 925

Cys Leu Gly Asn Glu Ser Leu Leu Asp Asn Cys Gln Met Thr Val Leu
930 935 940

Gly Ala Pro Pro Cys Ile His Gly Asn Thr Val Ser Val Ile Cys Thr
945 950 955 960

Gly Ser Leu Thr Gln Pro Leu Phe Pro Cys Leu Ala Asn Val Ser Asp
965 970 975

Pro Tyr Leu Ser Ala Val Pro Glu Gly Ser Ala Leu Ile Cys Leu Glu
980 985 990

Asp Lys Arg Leu Arg Leu Val Asp Gly Asp Ser Arg Cys Ala Gly Arg
995 1000 1005

Val Glu Ile Tyr His Asp Gly Phe Trp Gly Thr Ile Cys Asp Asp Gly
 1010 1015 1020
 Trp Asp Leu Ser Asp Ala His Val Val Cys Gln Lys Leu Gly Cys Gly
 1025 1030 1035 1040
 Val Ala Phe Asn Ala Thr Val Ser Ala His Phe Gly Glu Gly Ser Gly
 1045 1050 1055
 Pro Ile Trp Leu Asp Asp Leu Asn Cys Thr Gly Thr Glu Ser His Leu
 1060 1065 1070
 Trp Gln Cys Pro Ser Arg Gly Trp Gly Gln His Asp Cys Arg His Lys
 1075 1080 1085
 Glu Asp Ala Gly Val Ile Cys Ser Glu Phe Thr Ala Leu Arg Leu Tyr
 1090 1095 1100
 Ser Glu Thr Glu Thr Glu Ser Cys Ala Gly Arg Leu Glu Val Phe Tyr
 1105 1110 1115 1120
 Asn Gly Thr Trp Gly Ser Val Gly Arg Arg Asn Ile Thr Thr Ala Ile
 1125 1130 1135
 Ala Gly Ile Val Cys Arg Gln Leu Gly Cys Gly Glu Asn Gly Val Val
 1140 1145 1150
 Ser Leu Ala Pro Leu Ser Lys Thr Gly Ser Gly Phe Met Trp Val Asp
 1155 1160 1165
 Asp Ile Gln Cys Pro Lys Thr His Ile Ser Ile Trp Gln Cys Leu Ser
 1170 1175 1180
 Ala Pro Trp Glu Arg Arg Ile Ser Ser Pro Ala Glu Glu Thr Trp Ile
 1185 1190 1195 1200
 Thr Cys Glu Asp Arg Ile Arg Val Arg Gly Gly Asp Thr Glu Cys Ser
 1205 1210 1215
 Gly Arg Val Glu Ile Trp His Ala Gly Ser Trp Gly Thr Val Cys Asp
 1220 1225 1230
 Asp Ser Trp Asp Leu Ala Glu Ala Glu Val Val Cys Gln Gln Leu Gly
 1235 1240 1245
 Cys Gly Ser Ala Leu Ala Ala Leu Arg Asp Ala Ser Phe Gly Gln Gly
 1250 1255 1260

Thr Gly Thr Ile Trp Leu Asp Asp Met Arg Cys Lys Gly Asn Glu Ser
1265 1270 1275 1280

Phe Leu Trp Asp Cys His Ala Lys Pro Trp Gly Gln Ser Asp Cys Gly
1285 1290 1295

His Lys Glu Asp Ala Gly Val Arg Cys Ser Gly Gln Ser Leu Lys Ser
1300 1305 1310

Leu Asn Ala Ser Ser Gly His Leu Ala Leu Ile Leu Ser Ser Ile Phe
1315 1320 1325

Gly Leu Leu Leu Leu Val Leu Phe Ile Leu Phe Leu Thr Trp Cys Arg
1330 1335 1340

Val Gln Lys Gln Lys His Leu Pro Leu Arg Val Ser Thr Arg Arg Arg
1345 1350 1355 1360

Gly Ser Leu Glu Glu Asn Leu Phe His Glu Met Glu Thr Cys Leu Lys
1365 1370 1375

Arg Glu Asp Pro His Gly Thr Arg Thr Ser Asp Asp Thr Pro Asn His
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Gly Cys Glu Asp Ala Ser Asp Thr Ser Leu Leu Gly Val Leu Pro Ala
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Ser Glu Ala Thr Lys
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<211> 1319

<212> PRT

<213> Homo sapiens

<400> 14

Phe Asn Gly Thr Asp Leu Glu Leu Arg Leu Val Asn Gly Asp Gly Pro
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Cys Ser Gly Thr Val Glu Val Lys Phe Gln Gly Gln Trp Gly Thr Val
20 25 30

Cys Asp Asp Gly Trp Asn Thr Thr Ala Ser Thr Val Val Cys Lys Gln
35 40 45

Leu Gly Cys Pro Phe Ser Phe Ala Met Phe Arg Phe Gly Gln Ala Val
50 55 60

Thr	Arg	His	Gly	Lys	Ile	Trp	Leu	Asp	Asp	Val	Ser	Cys	Tyr	Gly	Asn	65	70	75	80
Glu	Ser	Ala	Leu	Trp	Glu	Cys	Gln	His	Arg	Glu	Trp	Gly	Ser	His	Asn	85	90	95	
Cys	Tyr	His	Gly	Glu	Asp	Val	Gly	Val	Asn	Cys	Tyr	Gly	Glu	Ala	Asn	100	105	110	
Leu	Gly	Leu	Arg	Leu	Val	Asp	Gly	Asn	Asn	Ser	Cys	Ser	Gly	Arg	Val	115	120	125	
Glu	Val	Lys	Phe	Gln	Glu	Arg	Trp	Gly	Thr	Ile	Cys	Asp	Asp	Gly	Trp	130	135	140	
Asn	Leu	Asn	Thr	Ala	Ala	Val	Val	Cys	Arg	Gln	Leu	Gly	Cys	Pro	Ser	145	150	155	160
Ser	Phe	Ile	Ser	Ser	Gly	Val	Val	Asn	Ser	Pro	Ala	Val	Leu	Arg	Pro	165	170	175	
Ile	Trp	Leu	Asp	Asp	Ile	Leu	Cys	Gln	Gly	Asn	Glu	Leu	Ala	Leu	Trp	180	185	190	
Asn	Cys	Arg	His	Arg	Gly	Trp	Gly	Asn	His	Asp	Cys	Ser	His	Asn	Glu	195	200	205	
Asp	Val	Thr	Leu	Thr	Cys	Tyr	Asp	Ser	Ser	Asp	Leu	Glu	Leu	Arg	Leu	210	215	220	
Val	Gly	Gly	Thr	Asn	Arg	Cys	Met	Gly	Arg	Val	Glu	Leu	Lys	Ile	Gln	225	230	235	240
Gly	Arg	Trp	Gly	Thr	Val	Cys	His	His	Lys	Trp	Asn	Asn	Ala	Ala	Ala	245	250	255	
Asp	Val	Val	Cys	Lys	Gln	Leu	Gly	Cys	Gly	Thr	Ala	Leu	His	Phe	Ala	260	265	270	
Gly	Leu	Pro	His	Leu	Gln	Ser	Gly	Ser	Asp	Val	Val	Trp	Leu	Asp	Gly	275	280	285	
Val	Ser	Cys	Ser	Gly	Asn	Glu	Ser	Phe	Leu	Trp	Asp	Cys	Arg	His	Ser	290	295	300	
Gly	Thr	Val	Asn	Phe	Asp	Cys	Leu	His	Gln	Asn	Asp	Val	Ser	Val	Ile	305	310	315	320

Cys Ser Asp Gly Ala Asp Leu Glu Leu Arg Leu Ala Asp Gly Ser Asn
 325 330 335

Asn Cys Ser Gly Arg Val Glu Val Arg Ile His Glu Gln Trp Trp Thr
 340 345 350

Ile Cys Asp Gln Asn Trp Lys Asn Glu Gln Ala Leu Val Val Cys Lys
 355 360 365

Gln Leu Gly Cys Pro Phe Ser Val Phe Gly Ser Arg Arg Ala Lys Pro
 370 375 380

Ser Asn Glu Ala Arg Asp Ile Trp Ile Asn Ser Ile Ser Cys Thr Gly
 385 390 395 400

Asn Glu Ser Ala Leu Trp Asp Cys Thr Tyr Asp Gly Lys Ala Lys Arg
 405 410 415

Thr Cys Phe Arg Arg Ser Asp Ala Gly Val Ile Cys Ser Asp Lys Ala
 420 425 430

Asp Leu Asp Leu Arg Leu Val Gly Ala His Ser Pro Cys Tyr Gly Arg
 435 440 445

Leu Glu Val Lys Tyr Gln Gly Glu Trp Gly Thr Val Cys His Asp Arg
 450 455 460

Trp Ser Thr Arg Asn Ala Ala Val Val Cys Lys Gln Leu Gly Cys Gly
 465 470 475 480

Lys Pro Met His Val Phe Gly Met Thr Tyr Phe Lys Glu Ala Ser Gly
 485 490 495

Pro Ile Trp Leu Asp Asp Val Ser Cys Ile Gly Asn Glu Ser Asn Ile
 500 505 510

Trp Asp Cys Glu His Ser Gly Trp Gly Lys His Asn Cys Val His Arg
 515 520 525

Glu Asp Val Ile Val Thr Cys Ser Gly Asp Ala Thr Trp Gly Leu Arg
 530 535 540

Leu Val Gly Gly Ser Asn Arg Cys Ser Gly Arg Leu Glu Val Tyr Phe
 545 550 555 560

Gln Gly Arg Trp Gly Thr Val Cys Asp Asp Gly Trp Asn Ser Lys Ala
 565 570 575

Ala Ala Val Val Cys Ser Gln Leu Asp Cys Pro Ser Ser Ile Ile Gly
580 585 590

Met Gly Leu Gly Asn Ala Ser Thr Gly Tyr Gly Lys Ile Trp Leu Asp
595 600 605

Asp Val Ser Cys Asp Gly Asp Glu Ser Asp Leu Trp Ser Cys Arg Asn
610 615 620

Ser Gly Trp Gly Asn Asn Asp Cys Ser His Ser Glu Asp Val Gly Val
625 630 635 640

Ile Cys Ser Asp Ala Ser Asp Met Glu Leu Arg Leu Val Gly Gly Ser
645 650 655

Ser Arg Cys Ala Gly Lys Val Glu Val Asn Val Gln Gly Ala Val Gly
660 665 670

Ile Leu Cys Ala Asn Gly Trp Gly Met Asn Ile Ala Glu Val Val Cys
675 680 685

Arg Gln Leu Glu Cys Gly Ser Ala Ile Arg Val Ser Arg Glu Pro His
690 695 700

Phe Thr Glu Arg Thr Leu His Ile Leu Met Ser Asn Ser Gly Cys Thr
705 710 715 720

Gly Gly Glu Ala Ser Leu Trp Asp Cys Ile Arg Trp Glu Trp Lys Gln
725 730 735

Thr Ala Cys His Leu Asn Met Glu Ala Ser Leu Ile Cys Ser Ala His
740 745 750

Arg Gln Pro Arg Leu Val Gly Ala Asp Met Pro Cys Ser Gly Arg Val
755 760 765

Glu Val Lys His Ala Asp Thr Trp Arg Ser Val Cys Asp Ser Asp Phe
770 775 780

Ser Leu His Ala Ala Asn Val Leu Cys Arg Glu Leu Asn Cys Gly Asp
785 790 795 800

Ala Ile Ser Leu Ser Val Gly Asp His Phe Gly Lys Gly Asn Gly Leu
805 810 815

Thr Trp Ala Glu Lys Phe Gln Cys Glu Gly Ser Glu Thr His Leu Ala
820 825 830

Leu Cys Pro Ile Val Gln His Pro Glu Asp Thr Cys Ile His Ser Arg
835 840 845

Glu Val Gly Val Val Cys Ser Arg Tyr Thr Asp Val Arg Leu Val Asn
850 855 860

Gly Lys Ser Gln Cys Asp Gly Gln Val Glu Ile Asn Val Leu Gly His
865 870 875 880

Trp Gly Ser Leu Cys Asp Thr His Trp Asp Pro Glu Asp Ala Arg Val
885 890 895

Leu Cys Arg Gln Leu Ser Cys Gly Thr Ala Leu Ser Thr Thr Gly Gly
900 905 910

Lys Tyr Ile Gly Glu Arg Ser Val Arg Val Trp Gly His Arg Phe His
915 920 925

Cys Leu Gly Asn Glu Ser Leu Leu Asp Asn Cys Gln Met Thr Val Leu
930 935 940

Gly Ala Pro Pro Cys Ile His Gly Asn Thr Val Ser Val Ile Cys Thr
945 950 955 960

Gly Ser Leu Thr Gln Pro Leu Phe Pro Cys Leu Ala Asn Val Ser Asp
965 970 975

Pro Tyr Leu Ser Ala Val Pro Glu Gly Ser Ala Leu Ile Cys Leu Glu
980 985 990

Asp Lys Arg Leu Arg Leu Val Asp Gly Asp Ser Arg Cys Ala Gly Arg
995 1000 1005

Val Glu Ile Tyr His Asp Gly Phe Trp Gly Thr Ile Cys Asp Asp Gly
1010 1015 1020

Trp Asp Leu Ser Asp Ala His Val Val Cys Gln Lys Leu Gly Cys Gly
1025 1030 1035 1040

Val Ala Phe Asn Ala Thr Val Ser Ala His Phe Gly Glu Gly Ser Gly
1045 1050 1055

Pro Ile Trp Leu Asp Asp Leu Asn Cys Thr Gly Thr Glu Ser His Leu
1060 1065 1070

Trp Gln Cys Pro Ser Arg Gly Trp Gly Gln His Asp Cys Arg His Lys
1075 1080 1085

Glu Asp Ala Gly Val Ile Cys Ser Glu Phe Thr Ala Leu Arg Leu Tyr
1090 1095 1100

Ser Glu Thr Glu Thr Glu Ser Cys Ala Gly Arg Leu Glu Val Phe Tyr
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Asn Gly Thr Trp Gly Ser Val Gly Arg Arg Asn Ile Thr Thr Ala Ile
1125 1130 1135

Ala Gly Ile Val Cys Arg Gln Leu Gly Cys Gly Glu Asn Gly Val Val
1140 1145 1150

Ser Leu Ala Pro Leu Ser Lys Thr Gly Ser Gly Phe Met Trp Val Asp
1155 1160 1165

Asp Ile Gln Cys Pro Lys Thr His Ile Ser Ile Trp Gln Cys Leu Ser
1170 1175 1180

Ala Pro Trp Glu Arg Arg Ile Ser Ser Pro Ala Glu Glu Thr Trp Ile
1185 1190 1195 1200

Thr Cys Glu Asp Arg Ile Arg Val Arg Gly Gly Asp Thr Glu Cys Ser
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Gly Arg Val Glu Ile Trp His Ala Gly Ser Trp Gly Thr Val Cys Asp
1220 1225 1230

Asp Ser Trp Asp Leu Ala Glu Ala Glu Val Val Cys Gln Gln Leu Gly
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Cys Gly Ser Ala Leu Ala Ala Leu Arg Asp Ala Ser Phe Gly Gln Gly
1250 1255 1260

Thr Gly Thr Ile Trp Leu Asp Asp Met Arg Cys Lys Gly Asn Glu Ser
1265 1270 1275 1280

Phe Leu Trp Asp Cys His Ala Lys Pro Trp Gly Gln Ser Asp Cys Gly
1285 1290 1295

His Lys Glu Asp Ala Gly Val Arg Cys Ser Gly Gln Ser Leu Lys Ser
1300 1305 1310

Leu Asn Ala Ser Ser Gly His
1315

<210> 15

<211> 24
 <212> PRT
 <213> Homo sapiens

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<210> 16
 <211> 70
 <212> PRT
 <213> Homo sapiens

<400> 16
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 His Gly Cys Glu Asp Ala Ser Asp Thr Ser Leu Leu Gly Val Leu Pro
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 Ala Ser Glu Ala Thr Lys
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 <212> DNA
 <213> Homo sapiens

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<210> 18

<211> 2283

<212> DNA

<213> Homo sapiens

<400> 18

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gct 2283

<210> 19

<211> 761

<212> PRT

<213> Homo sapiens

<400> 19

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Phe Leu Phe Gln Leu Leu Gln Leu Leu Leu Pro Thr Thr Thr Ala Gly
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Gly Gly Gly Gln Gly Pro Met Pro Arg Val Arg Tyr Tyr Ala Gly Asp
35 40 45

Glu Arg Arg Ala Leu Ser Phe Phe His Gln Lys Gly Leu Gln Asp Phe
50 55 60

Asp Thr Leu Leu Leu Ser Gly Asp Gly Asn Thr Leu Tyr Val Gly Ala
65 70 75 80

Arg Glu Ala Ile Leu Ala Leu Asp Ile Gln Asp Pro Gly Val Pro Arg
85 90 95

Leu Lys Asn Met Ile Pro Trp Pro Ala Ser Asp Arg Lys Lys Ser Glu
100 105 110

Cys Ala Phe Lys Lys Lys Ser Asn Glu Thr Gln Cys Phe Asn Phe Ile
115 120 125

Arg Val Leu Val Ser Tyr Asn Val Thr His Leu Tyr Thr Cys Gly Thr
130 135 140

Phe Ala Phe Ser Pro Ala Cys Thr Phe Ile Glu Leu Gln Asp Ser Tyr
145 150 155 160

Leu Leu Pro Ile Ser Glu Asp Lys Val Met Glu Gly Lys Gly Gln Ser
165 170 175

Pro Phe Asp Pro Ala His Lys His Thr Ala Val Leu Val Asp Gly Met
180 185 190

Leu Tyr Ser Gly Thr Met Asn Asn Phe Leu Gly Ser Glu Pro Ile Leu
195 200 205

Met Arg Thr Leu Gly Ser Gln Pro Val Leu Lys Thr Asp Asn Phe Leu
210 215 220

Arg Trp Leu His His Asp Ala Ser Phe Val Ala Ala Ile Pro Ser Thr
225 230 235 240

Gln Val Val Tyr Phe Phe Phe Glu Glu Thr Ala Ser Glu Phe Asp Phe
245 250 255

Phe	Glu	Arg	Leu	His	Thr	Ser	Arg	Val	Ala	Arg	Val	Cys	Lys	Asn	Asp	260	265	270
Val	Gly	Gly	Glu	Lys	Leu	Leu	Gln	Lys	Lys	Trp	Thr	Thr	Phe	Leu	Lys	275	280	285
Ala	Gln	Leu	Leu	Cys	Thr	Gln	Pro	Gly	Gln	Leu	Pro	Phe	Asn	Val	Ile	290	295	300
Arg	His	Ala	Val	Leu	Leu	Pro	Ala	Asp	Ser	Pro	Thr	Ala	Pro	His	Ile	305	310	315 320
Tyr	Ala	Val	Phe	Thr	Ser	Gln	Trp	Gln	Val	Gly	Gly	Thr	Arg	Ser	Ser	325	330	335
Ala	Val	Cys	Ala	Phe	Ser	Leu	Leu	Asp	Ile	Glu	Arg	Val	Phe	Lys	Gly	340	345	350
Lys	Tyr	Lys	Glu	Leu	Asn	Lys	Glu	Thr	Ser	Arg	Trp	Thr	Thr	Tyr	Arg	355	360	365
Gly	Pro	Glu	Thr	Asn	Pro	Arg	Pro	Gly	Ser	Cys	Ser	Val	Gly	Pro	Ser	370	375	380
Ser	Asp	Lys	Ala	Leu	Thr	Phe	Met	Lys	Asp	His	Phe	Leu	Met	Asp	Glu	385	390	395 400
Gln	Val	Val	Gly	Thr	Pro	Leu	Leu	Val	Lys	Ser	Gly	Val	Glu	Tyr	Thr	405	410	415
Arg	Leu	Ala	Val	Glu	Thr	Ala	Gln	Gly	Leu	Asp	Gly	His	Ser	His	Leu	420	425	430
Val	Met	Tyr	Leu	Gly	Thr	Thr	Thr	Gly	Ser	Leu	His	Lys	Ala	Val	Val	435	440	445
Ser	Gly	Asp	Ser	Ser	Ala	His	Leu	Val	Glu	Glu	Ile	Gln	Leu	Phe	Pro	450	455	460
Asp	Pro	Glu	Pro	Val	Arg	Asn	Leu	Gln	Leu	Ala	Pro	Thr	Gln	Gly	Ala	465	470	475 480
Val	Phe	Val	Gly	Phe	Ser	Gly	Gly	Val	Trp	Arg	Val	Pro	Arg	Ala	Asn	485	490	495
Cys	Ser	Val	Tyr	Glu	Ser	Cys	Val	Asp	Cys	Val	Leu	Ala	Arg	Asp	Pro	500	505	510

His Cys Ala Trp Asp Pro Glu Ser Arg Thr Cys Cys Leu Leu Ser Ala
515 520 525

Pro Asn Leu Asn Ser Trp Lys Gln Asp Met Glu Arg Gly Asn Pro Glu
530 535 540

Trp Ala Cys Ala Ser Gly Pro Met Ser Arg Ser Leu Arg Pro Gln Ser
545 550 555 560

Arg Pro Gln Ile Ile Lys Glu Val Leu Ala Val Pro Asn Ser Ile Leu
565 570 575

Glu Leu Pro Cys Pro His Leu Ser Ala Leu Ala Ser Tyr Tyr Trp Ser
580 585 590

His Gly Pro Ala Ala Val Pro Glu Ala Ser Ser Thr Val Tyr Asn Gly
595 600 605

Ser Leu Leu Leu Ile Val Gln Asp Gly Val Gly Gly Leu Tyr Gln Cys
610 615 620

Trp Ala Thr Glu Asn Gly Phe Ser Tyr Pro Val Ile Ser Tyr Trp Val
625 630 635 640

Asp Ser Gln Asp Gln Thr Leu Ala Leu Asp Pro Glu Leu Ala Gly Ile
645 650 655

Pro Arg Glu His Val Lys Val Pro Leu Thr Arg Val Ser Gly Gly Ala
660 665 670

Ala Leu Ala Ala Gln Gln Ser Tyr Trp Pro His Phe Val Thr Val Thr
675 680 685

Val Leu Phe Ala Leu Val Leu Ser Gly Ala Leu Ile Ile Leu Val Ala
690 695 700

Ser Pro Leu Arg Ala Leu Arg Ala Arg Gly Lys Val Gln Gly Cys Glu
705 710 715 720

Thr Leu Arg Pro Gly Glu Lys Ala Pro Leu Ser Arg Glu Gln His Leu
725 730 735

Gln Ser Pro Lys Glu Cys Arg Thr Ser Ala Ser Asp Val Asp Ala Asp
740 745 750

Asn Asn Cys Leu Gly Thr Glu Val Ala
755 760

<210> 20
 <211> 31
 <212> PRT
 <213> Homo sapiens

<400> 20
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 20 25 30

<210> 21
 <211> 730
 <212> PRT
 <213> Homo sapiens

<400> 21
 Gly Gly Gly Gly Gln Gly Pro Met Pro Arg Val Arg Tyr Tyr Ala Gly
 1 5 10 15

Asp Glu Arg Arg Ala Leu Ser Phe Phe His Gln Lys Gly Leu Gln Asp
 20 25 30

Phe Asp Thr Leu Leu Leu Ser Gly Asp Gly Asn Thr Leu Tyr Val Gly
 35 40 45

Ala Arg Glu Ala Ile Leu Ala Leu Asp Ile Gln Asp Pro Gly Val Pro
 50 55 60

Arg Leu Lys Asn Met Ile Pro Trp Pro Ala Ser Asp Arg Lys Lys Ser
 65 70 75 80

Glu Cys Ala Phe Lys Lys Lys Ser Asn Glu Thr Gln Cys Phe Asn Phe
 85 90 95

Ile Arg Val Leu Val Ser Tyr Asn Val Thr His Leu Tyr Thr Cys Gly
 100 105 110

Thr Phe Ala Phe Ser Pro Ala Cys Thr Phe Ile Glu Leu Gln Asp Ser
 115 120 125

Tyr Leu Leu Pro Ile Ser Glu Asp Lys Val Met Glu Gly Lys Gly Gln
 130 135 140

Ser Pro Phe Asp Pro Ala His Lys His Thr Ala Val Leu Val Asp Gly
 145 150 155 160
 Met Leu Tyr Ser Gly Thr Met Asn Asn Phe Leu Gly Ser Glu Pro Ile
 165 170 175
 Leu Met Arg Thr Leu Gly Ser Gln Pro Val Leu Lys Thr Asp Asn Phe
 180 185 190
 Leu Arg Trp Leu His His Asp Ala Ser Phe Val Ala Ala Ile Pro Ser
 195 200 205
 Thr Gln Val Val Tyr Phe Phe Phe Glu Glu Thr Ala Ser Glu Phe Asp
 210 215 220
 Phe Phe Glu Arg Leu His Thr Ser Arg Val Ala Arg Val Cys Lys Asn
 225 230 235 240
 Asp Val Gly Gly Glu Lys Leu Leu Gln Lys Lys Trp Thr Thr Phe Leu
 245 250 255
 Lys Ala Gln Leu Leu Cys Thr Gln Pro Gly Gln Leu Pro Phe Asn Val
 260 265 270
 Ile Arg His Ala Val Leu Leu Pro Ala Asp Ser Pro Thr Ala Pro His
 275 280 285
 Ile Tyr Ala Val Phe Thr Ser Gln Trp Gln Val Gly Gly Thr Arg Ser
 290 295 300
 Ser Ala Val Cys Ala Phe Ser Leu Leu Asp Ile Glu Arg Val Phe Lys
 305 310 315 320
 Gly Lys Tyr Lys Glu Leu Asn Lys Glu Thr Ser Arg Trp Thr Thr Tyr
 325 330 335
 Arg Gly Pro Glu Thr Asn Pro Arg Pro Gly Ser Cys Ser Val Gly Pro
 340 345 350
 Ser Ser Asp Lys Ala Leu Thr Phe Met Lys Asp His Phe Leu Met Asp
 355 360 365
 Glu Gln Val Val Gly Thr Pro Leu Leu Val Lys Ser Gly Val Glu Tyr
 370 375 380
 Thr Arg Leu Ala Val Glu Thr Ala Gln Gly Leu Asp Gly His Ser His
 385 390 395 400

Leu Val Met Tyr Leu Gly Thr Thr Thr Gly Ser Leu His Lys Ala Val
405 410 415

Val Ser Gly Asp Ser Ser Ala His Leu Val Glu Glu Ile Gln Leu Phe
420 425 430

Pro Asp Pro Glu Pro Val Arg Asn Leu Gln Leu Ala Pro Thr Gln Gly
435 440 445

Ala Val Phe Val Gly Phe Ser Gly Gly Val Trp Arg Val Pro Arg Ala
450 455 460

Asn Cys Ser Val Tyr Glu Ser Cys Val Asp Cys Val Leu Ala Arg Asp
465 470 475 480

Pro His Cys Ala Trp Asp Pro Glu Ser Arg Thr Cys Cys Leu Leu Ser
485 490 495

Ala Pro Asn Leu Asn Ser Trp Lys Gln Asp Met Glu Arg Gly Asn Pro
500 505 510

Glu Trp Ala Cys Ala Ser Gly Pro Met Ser Arg Ser Leu Arg Pro Gln
515 520 525

Ser Arg Pro Gln Ile Ile Lys Glu Val Leu Ala Val Pro Asn Ser Ile
530 535 540

Leu Glu Leu Pro Cys Pro His Leu Ser Ala Leu Ala Ser Tyr Tyr Trp
545 550 555 560

Ser His Gly Pro Ala Ala Val Pro Glu Ala Ser Ser Thr Val Tyr Asn
565 570 575

Gly Ser Leu Leu Leu Ile Val Gln Asp Gly Val Gly Gly Leu Tyr Gln
580 585 590

Cys Trp Ala Thr Glu Asn Gly Phe Ser Tyr Pro Val Ile Ser Tyr Trp
595 600 605

Val Asp Ser Gln Asp Gln Thr Leu Ala Leu Asp Pro Glu Leu Ala Gly
610 615 620

Ile Pro Arg Glu His Val Lys Val Pro Leu Thr Arg Val Ser Gly Gly
625 630 635 640

Ala Ala Leu Ala Ala Gln Gln Ser Tyr Trp Pro His Phe Val Thr Val
645 650 655

Thr Val Leu Phe Ala Leu Val Leu Ser Gly Ala Leu Ile Ile Leu Val
660 665 670

Ala Ser Pro Leu Arg Ala Leu Arg Ala Arg Gly Lys Val Gln Gly Cys
675 680 685

Glu Thr Leu Arg Pro Gly Glu Lys Ala Pro Leu Ser Arg Glu Gln His
690 695 700

Leu Gln Ser Pro Lys Glu Cys Arg Thr Ser Ala Ser Asp Val Asp Ala
705 710 715 720

Asp Asn Asn Cys Leu Gly Thr Glu Val Ala
725 730

<210> 22

<211> 652

<212> PRT

<213> Homo sapiens

<400> 22

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Phe Asp Thr Leu Leu Leu Ser Gly Asp Gly Asn Thr Leu Tyr Val Gly
35 40 45

Ala Arg Glu Ala Ile Leu Ala Leu Asp Ile Gln Asp Pro Gly Val Pro
50 55 60

Arg Leu Lys Asn Met Ile Pro Trp Pro Ala Ser Asp Arg Lys Lys Ser
65 70 75 80

Glu Cys Ala Phe Lys Lys Lys Ser Asn Glu Thr Gln Cys Phe Asn Phe
85 90 95

Ile Arg Val Leu Val Ser Tyr Asn Val Thr His Leu Tyr Thr Cys Gly
100 105 110

Thr Phe Ala Phe Ser Pro Ala Cys Thr Phe Ile Glu Leu Gln Asp Ser
115 120 125

Tyr Leu Leu Pro Ile Ser Glu Asp Lys Val Met Glu Gly Lys Gly Gln
130 135 140

Ser Pro Phe Asp Pro Ala His Lys His Thr Ala Val Leu Val Asp Gly
 145 150 155 160
 Met Leu Tyr Ser Gly Thr Met Asn Asn Phe Leu Gly Ser Glu Pro Ile
 165 170 175
 Leu Met Arg, Thr Leu Gly Ser Gln Pro Val Leu Lys Thr Asp Asn Phe
 180 185 190
 Leu Arg Trp Leu His His Asp Ala Ser Phe Val Ala Ala Ile Pro Ser
 195 200 205
 Thr Gln Val Val Tyr Phe Phe Phe Glu Glu Thr Ala Ser Glu Phe Asp
 210 215 220
 Phe Phe Glu Arg Leu His Thr Ser Arg Val Ala Arg Val Cys Lys Asn
 225 230 235 240
 Asp Val Gly Gly Glu Lys Leu Leu Gln Lys Lys Trp Thr Thr Phe Leu
 245 250 255
 Lys Ala Gln Leu Leu Cys Thr Gln Pro Gly Gln Leu Pro Phe Asn Val
 260 265 270
 Ile Arg His Ala Val Leu Leu Pro Ala Asp Ser Pro Thr Ala Pro His
 275 280 285
 Ile Tyr Ala Val Phe Thr Ser Gln Trp Gln Val Gly Gly Thr Arg Ser
 290 295 300
 Ser Ala Val Cys Ala Phe Ser Leu Leu Asp Ile Glu Arg Val Phe Lys
 305 310 315 320
 Gly Lys Tyr Lys Glu Leu Asn Lys Glu Thr Ser Arg Trp Thr Thr Tyr
 325 330 335
 Arg Gly Pro Glu Thr Asn Pro Arg Pro Gly Ser Cys Ser Val Gly Pro
 340 345 350
 Ser Ser Asp Lys Ala Leu Thr Phe Met Lys Asp His Phe Leu Met Asp
 355 360 365
 Glu Gln Val Val Gly Thr Pro Leu Leu Val Lys Ser Gly Val Glu Tyr
 370 375 380
 Thr Arg Leu Ala Val Glu Thr Ala Gln Gly Leu Asp Gly His Ser His
 385 390 395 400

Leu Val Met Tyr Leu Gly Thr Thr Thr Gly Ser Leu His Lys Ala Val
 405 410 415
 Val Ser Gly Asp Ser Ser Ala His Leu Val Glu Glu Ile Gln Leu Phe
 420 425 430
 Pro Asp Pro Glu Pro Val Arg Asn Leu Gln Leu Ala Pro Thr Gln Gly
 435 440 445
 Ala Val Phe Val Gly Phe Ser Gly Gly Val Trp Arg Val Pro Arg Ala
 450 455 460
 Asn Cys Ser Val Tyr Glu Ser Cys Val Asp Cys Val Leu Ala Arg Asp
 465 470 475 480
 Pro His Cys Ala Trp Asp Pro Glu Ser Arg Thr Cys Cys Leu Leu Ser
 485 490 495
 Ala Pro Asn Leu Asn Ser Trp Lys Gln Asp Met Glu Arg Gly Asn Pro
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 Glu Trp Ala Cys Ala Ser Gly Pro Met Ser Arg Ser Leu Arg Pro Gln
 515 520 525
 Ser Arg Pro Gln Ile Ile Lys Glu Val Leu Ala Val Pro Asn Ser Ile
 530 535 540
 Leu Glu Leu Pro Cys Pro His Leu Ser Ala Leu Ala Ser Tyr Tyr Trp
 545 550 555 560
 Ser His Gly Pro Ala Ala Val Pro Glu Ala Ser Ser Thr Val Tyr Asn
 565 570 575
 Gly Ser Leu Leu Leu Ile Val Gln Asp Gly Val Gly Gly Leu Tyr Gln
 580 585 590
 Cys Trp Ala Thr Glu Asn Gly Phe Ser Tyr Pro Val Ile Ser Tyr Trp
 595 600 605
 Val Asp Ser Gln Asp Gln Thr Leu Ala Leu Asp Pro Glu Leu Ala Gly
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 Ile Pro Arg Glu His Val Lys Val Pro Leu Thr Arg Val Ser Gly Gly
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 645 650

<210> 23
 <211> 21
 <212> PRT
 <213> Homo sapiens

<400> 23
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 Ile Ile Leu Val Ala
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<210> 24
 <211> 57
 <212> PRT
 <213> Homo sapiens

<400> 24
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 Thr Leu Arg Pro Gly Glu Lys Ala Pro Leu Ser Arg Glu Gln His Leu
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 Gln Ser Pro Lys Glu Cys Arg Thr Ser Ala Ser Asp Val Asp Ala Asp
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 Asn Asn Cys Leu Gly Thr Glu Val Ala
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<210> 25
 <211> 2964
 <212> DNA
 <213> Homo sapiens

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 aaaaaaaaaa aaaagggcgg ccgc 2964

<210> 26

<211> 516

<212> DNA

<213> Homo sapiens

<400> 26

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tggtacttct ggttccttct gatgatgggc gtgcttttct gctgcggagc cggcttcttc 240
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cctccgcccc cgtacgaaca ggtagtgaag gccaaag 516
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<210> 27

<211> 172

<212> PRT

<213> Homo sapiens

<400> 27

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```

```
Leu Glu Cys Thr Glu Ala Lys Lys His Cys Trp Tyr Phe Glu Gly Leu
              20              25              30
```

```
Tyr Pro Thr Tyr Tyr Ile Cys Arg Ser Tyr Glu Asp Cys Cys Gly Ser
              35              40              45
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```
Arg Cys Cys Val Arg Ala Leu Ser Ile Gln Arg Leu Trp Tyr Phe Trp
              50              55              60
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```
Phe Leu Leu Met Met Gly Val Leu Phe Cys Cys Gly Ala Gly Phe Phe
              65              70              75              80
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```
Ile Arg Arg Arg Met Tyr Pro Pro Pro Leu Ile Glu Glu Pro Ala Phe
              85              90              95
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```
Asn Val Ser Tyr Thr Arg Gln Pro Pro Asn Pro Gly Pro Gly Ala Gln
              100              105              110
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```
Gln Pro Gly Pro Pro Tyr Tyr Thr Asp Pro Gly Gly Pro Gly Met Asn
              115              120              125
```

```
Pro Val Gly Asn Ser Met Ala Met Ala Phe Gln Val Pro Pro Asn Ser
              130              135              140
```

```
Pro Gln Gly Ser Val Ala Cys Pro Pro Pro Pro Ala Tyr Cys Asn Thr
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```

```
Pro Pro Pro Pro Tyr Glu Gln Val Val Lys Ala Lys
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165

170

<210> 28

<211> 22

<212> PRT

<213> Homo sapiens

<400> 28

Met Arg Arg Gln Pro Ala Lys Val Ala Ala Leu Leu Leu Gly Leu Leu
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Leu Glu Cys Thr Glu Ala
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<210> 29

<211> 150

<212> PRT

<213> Homo sapiens

<400> 29

Lys Lys His Cys Trp Tyr Phe Glu Gly Leu Tyr Pro Thr Tyr Tyr Ile
 1 5 10 15

Cys Arg Ser Tyr Glu Asp Cys Cys Gly Ser Arg Cys Cys Val Arg Ala
 20 25 30

Leu Ser Ile Gln Arg Leu Trp Tyr Phe Trp Phe Leu Leu Met Met Gly
 35 40 45

Val Leu Phe Cys Cys Gly Ala Gly Phe Phe Ile Arg Arg Arg Met Tyr
 50 55 60

Pro Pro Pro Leu Ile Glu Glu Pro Ala Phe Asn Val Ser Tyr Thr Arg
 65 70 75 80

Gln Pro Pro Asn Pro Gly Pro Gly Ala Gln Gln Pro Gly Pro Pro Tyr
 85 90 95

Tyr Thr Asp Pro Gly Gly Pro Gly Met Asn Pro Val Gly Asn Ser Met
 100 105 110

Ala Met Ala Phe Gln Val Pro Pro Asn Ser Pro Gln Gly Ser Val Ala
 115 120 125

Cys Pro Pro Pro Pro Ala Tyr Cys Asn Thr Pro Pro Pro Pro Tyr Glu
 130 135 140

Gln Val Val Lys Ala Lys
145 150

<210> 30

<211> 38

<212> PRT

<213> Homo sapiens

<400> 30

Lys Lys His Cys Trp Tyr Phe Glu Gly Leu Tyr Pro Thr Tyr Tyr Ile
1 5 10 15

Cys Arg Ser Tyr Glu Asp Cys Cys Gly Ser Arg Cys Cys Val Arg Ala
20 25 30

Leu Ser Ile Gln Arg Leu
35

<210> 31

<211> 21

<212> PRT

<213> Homo sapiens

<400> 31

Trp Tyr Phe Trp Phe Leu Leu Met Met Gly Val Leu Phe Cys Cys Gly
1 5 10 15

Ala Gly Phe Phe Ile
20

<210> 32

<211> 91

<212> PRT

<213> Homo sapiens

<400> 32

Arg Arg Arg Met Tyr Pro Pro Pro Leu Ile Glu Glu Pro Ala Phe Asn
1 5 10 15

Val Ser Tyr Thr Arg Gln Pro Pro Asn Pro Gly Pro Gly Ala Gln Gln
20 25 30

Pro Gly Pro Pro Tyr Tyr Thr Asp Pro Gly Gly Pro Gly Met Asn Pro
35 40 45

Val Gly Asn Ser Met Ala Met Ala Phe Gln Val Pro Pro Asn Ser Pro
 50 55 60

Gln Gly Ser Val Ala Cys Pro Pro Pro Pro Ala Tyr Cys Asn Thr Pro
 65 70 75 80

Pro Pro Pro Tyr Glu Gln Val Val Lys Ala Lys
 85 90

<210> 33
 <211> 1980
 <212> DNA
 <213> Homo sapiens

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<210> 34

<211> 1365

<212> DNA

<213> Homo sapiens

<400> 34

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 ccacacaaat tcttattcgt caattcagat attgaagttc ttgaggggtt ctttttgatt 1260
 tccaccgacc tgaagtatga aacatcctca aagcagcagc caagtttcca cgtatgggaa 1320
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<210> 35

<211> 455

<212> PRT

<213> Homo sapiens

<400> 35

Met Cys Thr Lys Thr Ile Pro Val Leu Trp Gly Cys Phe Leu Leu Trp
 1 5 10 15
 Asn Leu Tyr Val Ser Ser Ser Gln Thr Ile Tyr Pro Gly Ile Lys Ala
 20 25 30
 Arg Ile Thr Gln Arg Ala Leu Asp Tyr Gly Val Gln Ala Gly Met Lys
 35 40 45

Met Ile Glu Gln Met Leu Lys Glu Lys Lys Leu Pro Asp Leu Ser Gly
50 55 60

Ser Glu Ser Leu Glu Phe Leu Lys Val Asp Tyr Val Asn Tyr Asn Phe
65 70 75 80

Ser Asn Ile Lys Ile Ser Ala Phe Ser Phe Pro Asn Thr Ser Leu Ala
85 90 95

Phe Val Pro Gly Val Gly Ile Lys Ala Leu Thr Asn His Gly Thr Ala
100 105 110

Asn Ile Ser Thr Asp Trp Gly Phe Glu Ser Pro Leu Phe Val Leu Tyr
115 120 125

Asn Ser Phe Ala Glu Pro Met Glu Lys Pro Ile Leu Lys Asn Leu Asn
130 135 140

Glu Met Leu Cys Pro Ile Ile Ala Ser Glu Val Lys Ala Leu Asn Ala
145 150 155 160

Asn Leu Ser Thr Leu Glu Val Leu Thr Lys Ile Asp Asn Tyr Thr Leu
165 170 175

Leu Asp Tyr Ser Leu Ile Ser Ser Pro Glu Ile Thr Glu Asn Tyr Leu
180 185 190

Asp Leu Asn Leu Lys Gly Val Phe Tyr Pro Leu Glu Asn Leu Thr Asp
195 200 205

Pro Pro Phe Ser Pro Val Pro Phe Val Leu Pro Glu Arg Ser Asn Ser
210 215 220

Met Leu Tyr Ile Gly Ile Ala Glu Tyr Phe Phe Lys Ser Ala Ser Phe
225 230 235 240

Ala His Phe Thr Ala Gly Val Phe Asn Leu Thr Leu Ser Thr Glu Glu
245 250 255

Ile Ser Asn His Phe Val Gln Asn Ser Gln Gly Leu Gly Asn Val Leu
260 265 270

Ser Arg Ile Ala Glu Ile Tyr Ile Leu Ser Gln Pro Phe Met Val Arg
275 280 285

Ile Met Ala Thr Glu Pro Pro Ile Ile Asn Leu Gln Pro Gly Asn Phe
290 295 300

Thr Leu Asp Ile Pro Ala Ser Ile Met Met Leu Thr Gln Pro Lys Asn
305 310 315 320

Ser Thr Val Glu Thr Ile Val Ser Met Asp Phe Val Ala Ser Thr Ser
325 330 335

Val Gly Leu Val Ile Leu Gly Gln Arg Leu Val Cys Ser Leu Ser Leu
340 345 350

Asn Arg Phe Arg Leu Ala Leu Pro Glu Ser Asn Arg Ser Asn Ile Glu
355 360 365

Val Leu Arg Phe Glu Asn Ile Leu Ser Ser Ile Leu His Phe Gly Val
370 375 380

Leu Pro Leu Ala Asn Ala Lys Leu Gln Gln Gly Phe Pro Leu Pro Asn
385 390 395 400

Pro His Lys Phe Leu Phe Val Asn Ser Asp Ile Glu Val Leu Glu Gly
405 410 415

Phe Leu Leu Ile Ser Thr Asp Leu Lys Tyr Glu Thr Ser Ser Lys Gln
420 425 430

Gln Pro Ser Phe His Val Trp Glu Gly Leu Asn Leu Ile Ser Arg Gln
435 440 445

Trp Arg Gly Lys Ser Ala Pro
450 455

<210> 36

<211> 23

<212> PRT

<213> Homo sapiens

<400> 36

Met Cys Thr Lys Thr Ile Pro Val Leu Trp Gly Cys Phe Leu Leu Trp
1 5 10 15

Asn Leu Tyr Val Ser Ser Ser
20

<210> 37

<211> 432

<212> PRT

<213> Homo sapiens

<400> 37

Gln Thr Ile Tyr Pro Gly Ile Lys Ala Arg Ile Thr Gln Arg Ala Leu
1 5 10 15

Asp Tyr Gly Val Gln Ala Gly Met Lys Met Ile Glu Gln Met Leu Lys
20 25 30

Glu Lys Lys Leu Pro Asp Leu Ser Gly Ser Glu Ser Leu Glu Phe Leu
35 40 45

Lys Val Asp Tyr Val Asn Tyr Asn Phe Ser Asn Ile Lys Ile Ser Ala
50 55 60

Phe Ser Phe Pro Asn Thr Ser Leu Ala Phe Val Pro Gly Val Gly Ile
65 70 75 80

Lys Ala Leu Thr Asn His Gly Thr Ala Asn Ile Ser Thr Asp Trp Gly
85 90 95

Phe Glu Ser Pro Leu Phe Val Leu Tyr Asn Ser Phe Ala Glu Pro Met
100 105 110

Glu Lys Pro Ile Leu Lys Asn Leu Asn Glu Met Leu Cys Pro Ile Ile
115 120 125

Ala Ser Glu Val Lys Ala Leu Asn Ala Asn Leu Ser Thr Leu Glu Val
130 135 140

Leu Thr Lys Ile Asp Asn Tyr Thr Leu Leu Asp Tyr Ser Leu Ile Ser
145 150 155 160

Ser Pro Glu Ile Thr Glu Asn Tyr Leu Asp Leu Asn Leu Lys Gly Val
165 170 175

Phe Tyr Pro Leu Glu Asn Leu Thr Asp Pro Pro Phe Ser Pro Val Pro
180 185 190

Phe Val Leu Pro Glu Arg Ser Asn Ser Met Leu Tyr Ile Gly Ile Ala
195 200 205

Glu Tyr Phe Phe Lys Ser Ala Ser Phe Ala His Phe Thr Ala Gly Val
210 215 220

Phe Asn Leu Thr Leu Ser Thr Glu Glu Ile Ser Asn His Phe Val Gln
225 230 235 240

Asn Ser Gln Gly Leu Gly Asn Val Leu Ser Arg Ile Ala Glu Ile Tyr

Leu Val Ala Ile Gly Thr Ala Val Thr Ala Ala Val Asn Pro Gly Val
 20 25 30
 Val Val Arg Ile Ser Gln Lys Gly Leu Asp Tyr Ala Ser Gln Gln Gly
 35 40 45
 Thr Ala Ala Leu Gln Lys Glu Leu Lys Arg Ile Lys Ile Pro Asp Tyr
 50 55 60
 Ser Asp Ser Phe Lys Ile Lys His Leu Gly Lys Gly His Tyr Ser Phe
 65 70 75 80
 Tyr Ser Met Asp Ile Arg Glu Phe Gln Leu Pro Ser Ser Gln Ile Ser
 85 90 95
 Met Val Pro Asn Val Gly Leu Lys Phe Ser Ile Ser Asn Ala Asn Ile
 100 105 110
 Lys Ile Ser Gly Lys Trp Lys Ala Gln Lys Arg Phe Leu Lys Met Ser
 115 120 125
 Gly Asn Phe Asp Leu Ser Ile Glu Gly Met Ser Ile Ser Ala Asp Leu
 130 135 140
 Lys Leu Gly Ser Asn Pro Thr Ser Gly Lys Pro Thr Ile Thr Cys Ser
 145 150 155 160
 Ser Cys Ser Ser His Ile Asn Ser Val His Val His Ile Ser Lys Ser
 165 170 175
 Lys Val Gly Trp Leu Ile Gln Leu Phe His Lys Lys Ile Glu Ser Ala
 180 185 190
 Leu Arg Asn Lys Met Asn Ser Gln Val Cys Glu Lys Val Thr Asn Ser
 195 200 205
 Val Ser Ser Lys Leu Gln Pro Tyr Phe Gln Thr Leu Pro Val Met Thr
 210 215 220
 Lys Ile Asp Ser Val Ala Gly Ile Asn Tyr Gly Leu Val Ala Pro Pro
 225 230 235 240
 Ala Thr Thr Ala Glu Thr Leu Asp Val Gln Met Lys Gly Glu Phe Tyr
 245 250 255
 Ser Glu Asn His His Asn Pro Pro Pro Phe Ala Pro Pro Val Met Glu
 260 265 270

Phe Pro Ala Ala His Asp Arg Met Val Tyr Leu Gly Leu Ser Asp Tyr
 275 280 285

Phe Phe Asn Thr Ala Gly Leu Val Tyr Gln Glu Ala Gly Val Leu Lys
 290 295 300

Met Thr Leu Arg Asp Asp Met Ile Pro Lys Glu Ser Lys Phe Arg Leu
 305 310 315 320

Thr Thr Lys Phe Phe Gly Thr Phe Leu Pro Glu Val Ala Lys Lys Phe
 325 330 335

Pro Asn Met Lys Ile Gln Ile His Val Ser Ala Ser Thr Pro Pro His
 340 345 350

Leu Ser Val Gln Pro Thr Gly Leu Thr Phe Tyr Pro Ala Val Asp Val
 355 360 365

Gln Ala Phe Ala Val Leu Pro Asn Ser Ser Leu Ala Ser Leu Phe Leu
 370 375 380

Ile Gly Met His Thr Thr Gly Ser Met Glu Val Ser Ala Glu Ser Asn
 385 390 395 400

Arg Leu Val Gly Glu Leu Lys Leu Asp Arg Leu Leu Leu Glu Leu Lys
 405 410 415

His Ser Asn Ile Gly Pro Phe Pro Val Glu Leu Leu Gln Asp Ile Met
 420 425 430

Asn Tyr Ile Val Pro Ile Leu Val Leu Pro Arg Val Asn Glu Lys Leu
 435 440 445

Gln Lys Gly Phe Pro Leu Pro Thr Pro Ala Arg Val Gln Leu Tyr Asn
 450 455 460

Val Val Leu Gln Pro His Gln Asn Phe Leu Leu Phe Gly Ala Asp Val
 465 470 475 480

Val Tyr Lys

<210> 39

<211> 481

<212> PRT

<213> Homo sapiens

<400> 39

Met Gly Ala Leu Ala Arg Ala Leu Pro Ser Ile Leu Leu Ala Leu Leu
1 5 10 15

Leu Thr Ser Thr Pro Glu Ala Leu Gly Ala Asn Pro Gly Leu Val Ala
20 25 30

Arg Ile Thr Asp Lys Gly Leu Gln Tyr Ala Ala Gln Glu Gly Leu Leu
35 40 45

Ala Leu Gln Ser Glu Leu Leu Arg Ile Thr Leu Pro Asp Phe Thr Gly
50 55 60

Asp Leu Arg Ile Pro His Val Gly Arg Gly Arg Tyr Glu Phe His Ser
65 70 75 80

Leu Asn Ile His Glu Phe Gln Leu Pro Ser Ser Gln Ile Ser Met Val
85 90 95

Pro Asn Val Gly Leu Lys Phe Ser Ile Ser Asn Ala Asn Ile Lys Ile
100 105 110

Ser Gly Lys Trp Lys Ala Gln Lys Arg Phe Leu Lys Met Ser Gly Asn
115 120 125

Phe Asp Leu Ser Ile Glu Gly Met Ser Ile Ser Ala Asp Leu Lys Leu
130 135 140

Gly Ser Asn Pro Thr Ser Gly Lys Pro Thr Ile Thr Cys Ser Ser Cys
145 150 155 160

Ser Ser His Ile Asn Ser Val His Val His Ile Ser Lys Ser Lys Val
165 170 175

Gly Trp Leu Ile Gln Leu Phe His Lys Lys Ile Glu Ser Ala Leu Arg
180 185 190

Asn Lys Met Asn Ser Gln Val Cys Glu Lys Val Thr Asn Ser Val Ser
195 200 205

Ser Lys Leu Gln Pro Tyr Phe Gln Thr Leu Pro Val Met Thr Lys Ile
210 215 220

Asp Ser Val Ala Gly Ile Asn Tyr Gly Leu Val Ala Pro Pro Ala Thr
225 230 235 240

Thr Ala Glu Thr Leu Asp Val Gln Met Lys Gly Glu Phe Tyr Ser Glu
245 250 255

Asn His His Asn Pro Pro Pro Phe Ala Pro Pro Val Met Glu Phe Pro
260 265 270

Ala Ala His Asp Arg Met Val Tyr Leu Gly Leu Ser Asp Tyr Phe Phe
275 280 285

Asn Thr Ala Gly Leu Val Tyr Gln Glu Ala Gly Val Leu Lys Met Thr
290 295 300

Leu Arg Asp Asp Met Ile Pro Lys Glu Ser Lys Phe Arg Leu Thr Thr
305 310 315 320

Lys Phe Phe Gly Thr Phe Leu Pro Glu Val Ala Lys Lys Phe Pro Asn
325 330 335

Met Lys Ile Gln Ile His Val Ser Ala Ser Thr Pro Pro His Leu Ser
340 345 350

Val Gln Pro Thr Gly Leu Thr Phe Tyr Pro Ala Val Asp Val Gln Ala
355 360 365

Leu Ala Val Leu Pro Asn Ser Ser Leu Ala Ser Leu Phe Leu Ile Gly
370 375 380

Met His Thr Thr Gly Ser Met Glu Val Ser Ala Glu Ser Asn Arg Leu
385 390 395 400

Val Gly Glu Leu Lys Leu Asp Arg Leu Leu Leu Glu Leu Lys His Ser
405 410 415

Asn Ile Gly Pro Phe Pro Val Glu Leu Leu Gln Asp Ile Met Asn Tyr
420 425 430

Ile Val Pro Ile Leu Val Leu Pro Arg Val Asn Glu Lys Leu Gln Lys
435 440 445

Gly Phe Pro Leu Pro Thr Pro Ala Arg Val Gln Leu Tyr Asn Val Val
450 455 460

Leu Gln Pro His Gln Asn Phe Leu Leu Phe Gly Ala Asp Val Val Tyr
465 470 475 480

Lys

<210> 40

<211> 383

<212> PRT

<213> Caenorhabditis elegans

<400> 40

Met Arg Ile Ala His Ala Ser Ser Arg Gly Asn Ile Ser Ile Phe Ser
1 5 10 15

Val Phe Leu Ile Pro Leu Ile Ala Tyr Ile Leu Ile Leu Pro Gly Val
20 25 30

Arg Arg Lys Arg Val Val Thr Thr Val Thr Tyr Val Leu Met Leu Ala
35 40 45

Val Gly Gly Ala Leu Ile Ala Ser Leu Ile Tyr Pro Cys Trp Ala Ser
50 55 60

Gly Ser Gln Met Ile Tyr Thr Gln Phe Arg Gly His Ser Asn Glu Arg
65 70 75 80

Ile Leu Ala Lys Ile Gly Val Glu Ile Gly Leu Gln Lys Val Asn Val
85 90 95

Thr Leu Lys Phe Glu Arg Leu Leu Ser Ser Asn Asp Val Leu Pro Gly
100 105 110

Ser Asp Met Thr Glu Leu Tyr Tyr Asn Glu Gly Phe Asp Ile Ser Gly
115 120 125

Ile Ser Ser Met Ala Glu Ala Leu His His Gly Leu Glu Asn Gly Leu
130 135 140

Pro Tyr Pro Met Leu Ser Val Leu Glu Tyr Phe Ser Leu Asn Gln Asp
145 150 155 160

Ser Phe Asp Trp Gly Arg His Tyr Arg Val Ala Gly His Tyr Thr His
165 170 175

Ala Ala Ile Trp Phe Ala Phe Ala Cys Trp Cys Leu Ser Val Val Leu
180 185 190

Met Leu Phe Leu Pro His Asn Ala Tyr Lys Ser Ile Leu Ala Thr Gly
195 200 205

Ile Ser Cys Leu Ile Ala Cys Leu Val Tyr Leu Leu Leu Ser Pro Cys
210 215 220

Glu Leu Arg Ile Ala Phe Thr Gly Glu Asn Phe Glu Arg Val Asp Leu

Arg	Ile	Pro	His	Gly	Arg	Lys	Asn	His	Ser	Asp	Lys	Gly	Pro	Lys	Pro	65	70	75	80
Val	Val	Phe	Leu	Gln	His	Gly	Leu	Leu	Ala	Asp	Ser	Ser	Asn	Trp	Val	85	90	95	
Thr	Asn	Leu	Ala	Asn	Ser	Ser	Leu	Gly	Phe	Ile	Leu	Ala	Asp	Ala	Gly	100	105	110	
Phe	Asp	Val	Trp	Met	Gly	Asn	Ser	Arg	Gly	Asn	Thr	Trp	Ser	Arg	Lys	115	120	125	
His	Lys	Thr	Leu	Ser	Val	Ser	Gln	Asp	Glu	Phe	Trp	Ala	Phe	Ser	Tyr	130	135	140	
Asp	Glu	Met	Ala	Lys	Tyr	Asp	Leu	Pro	Ala	Ser	Ile	Asn	Phe	Ile	Leu	145	150	155	160
Asn	Lys	Thr	Gly	Gln	Glu	Gln	Val	Tyr	Tyr	Val	Gly	His	Ser	Gln	Gly	165	170	175	
Thr	Thr	Ile	Gly	Phe	Ile	Ala	Phe	Ser	Gln	Ile	Pro	Glu	Leu	Ala	Lys	180	185	190	
Arg	Ile	Lys	Met	Phe	Phe	Ala	Leu	Gly	Pro	Val	Ala	Ser	Val	Ala	Phe	195	200	205	
Cys	Thr	Ser	Pro	Met	Ala	Lys	Leu	Gly	Arg	Leu	Pro	Asp	His	Leu	Ile	210	215	220	
Lys	Asp	Leu	Phe	Gly	Asp	Lys	Glu	Phe	Leu	Pro	Gln	Ser	Ala	Phe	Leu	225	230	235	240
Lys	Trp	Leu	Gly	Thr	His	Val	Cys	Thr	His	Val	Ile	Leu	Lys	Glu	Leu	245	250	255	
Cys	Gly	Asn	Leu	Cys	Phe	Leu	Leu	Cys	Gly	Phe	Asn	Glu	Arg	Asn	Leu	260	265	270	
Asn	Met	Ser	Arg	Val	Asp	Val	Tyr	Thr	Thr	His	Ser	Pro	Ala	Gly	Thr	275	280	285	
Ser	Val	Gln	Asn	Met	Leu	His	Trp	Ser	Gln	Ala	Val	Lys	Phe	Gln	Lys	290	295	300	
Phe	Gln	Ala	Phe	Asp	Trp	Gly	Ser	Ser	Ala	Lys	Asn	Tyr	Phe	His	Tyr	305	310	315	320

Asn Gln Ser Tyr Pro Pro Thr Tyr Asn Val Lys Asp Met Leu Val Pro
 325 330 335

Thr Ala Val Trp Ser Gly Gly His Asp Trp Leu Ala Asp Val Tyr Asp
 340 345 350

Val Asn Ile Leu Leu Thr Gln Ile Thr Asn Leu Val Phe His Glu Ser
 355 360 365

Ile Pro Glu Trp Glu His Leu Asp Phe Ile Trp Gly Leu Asp Ala Pro
 370 375 380

Trp Arg Leu Tyr Asn Lys Ile Ile Asn Leu Met Arg Lys Tyr Gln
 385 390 395

<210> 42

<211> 19

<212> PRT

<213> Mus sp.

<400> 42

Met Ala Pro Pro Ala Ala Arg Leu Ala Leu Leu Ser Ala Ala Ala Leu
 1 5 10 15

Thr Leu Ala

<210> 43

<211> 451

<212> PRT

<213> Mus sp.

<400> 43

Ala Arg Pro Ala Pro Gly Pro Arg Ser Gly Pro Glu Cys Phe Thr Ala
 1 5 10 15

Asn Gly Ala Asp Tyr Arg Gly Thr Gln Ser Trp Thr Ala Leu Gln Gly
 20 25 30

Gly Lys Pro Cys Leu Phe Trp Asn Glu Thr Phe Gln His Pro Tyr Asn
 35 40 45

Thr Leu Lys Tyr Pro Asn Gly Glu Gly Gly Leu Gly Glu His Asn Tyr
 50 55 60

Cys Arg Asn Pro Asp Gly Asp Val Ser Pro Trp Cys Tyr Val Ala Glu

65

70

75

80

His Glu Asp Gly Val Tyr Trp Lys Tyr Cys Glu Ile Pro Ala Cys Gln
85 90 95

Met Pro Gly Asn Leu Gly Cys Tyr Lys Asp His Gly Asn Pro Pro Pro
100 105 110

Leu Thr Gly Thr Ser Lys Thr Ser Asn Lys Leu Thr Ile Gln Thr Cys
115 120 125

Ile Ser Phe Cys Arg Ser Gln Arg Phe Lys Phe Ala Gly Met Glu Ser
130 135 140

Gly Tyr Ala Cys Phe Cys Gly Asn Asn Pro Asp Tyr Trp Lys His Gly
145 150 155 160

Glu Ala Ala Ser Thr Glu Cys Asn Ser Val Cys Phe Gly Asp His Thr
165 170 175

Gln Pro Cys Gly Gly Asp Gly Arg Ile Ile Leu Phe Asp Thr Leu Val
180 185 190

Gly Ala Cys Gly Gly Asn Tyr Ser Ala Met Ala Ala Val Val Tyr Ser
195 200 205

Pro Asp Phe Pro Asp Thr Tyr Ala Thr Gly Arg Val Cys Tyr Trp Thr
210 215 220

Ile Arg Val Pro Gly Ala Ser Arg Ile His Phe Asn Phe Thr Leu Phe
225 230 235 240

Asp Ile Arg Asp Ser Ala Asp Met Val Glu Leu Leu Asp Gly Tyr Thr
245 250 255

His Arg Val Leu Val Arg Leu Ser Gly Arg Ser Arg Pro Pro Leu Ser
260 265 270

Phe Asn Val Ser Leu Asp Phe Val Ile Leu Tyr Phe Phe Ser Asp Arg
275 280 285

Ile Asn Gln Ala Gln Gly Phe Ala Val Leu Tyr Gln Ala Thr Lys Glu
290 295 300

Glu Pro Pro Gln Glu Arg Pro Ala Val Asn Gln Thr Leu Ala Glu Val
305 310 315 320

Ile Thr Glu Gln Ala Asn Leu Ser Val Ser Ala Ala His Ser Ser Lys

325

330

335

Val	Leu	Tyr	Val	Ile	Thr	Pro	Ser	Pro	Ser	His	Pro	Pro	Gln	Thr	Ala
			340				.	345					350		

Gln Val Ala Ile Pro Gly His Arg Gln Leu Gly Pro Thr Ala Thr Glu
355 360 365

Trp Lys Asp Gly Leu Cys Thr Ala Trp Arg Pro Ser Ser Ser Ser Gln
370 375 380

Ser Gln Gln Leu Ser Gln Arg Phe Phe Cys Met Ser His Leu Asn Leu
385 390 395 400

Ile Glu Ser Leu His Gln Glu Thr Leu Gly Thr Val Val Ser Leu Gly
405 410 415

Leu Leu Glu Ile Ser Gly Pro Phe Ser Met Asn Leu Pro Leu Gln Ser
420 425 430

Pro Ser Leu Arg Arg Ser Ser Arg Val Arg Val Asn Lys Met Thr Ala
435 440 445

Ile Pro Ser
450

<210> 44

<211> 150

<212> PRT

<213> Mus sp.

<400> 44

Lys Lys His Cys Trp Tyr Phe Glu Gly Leu Tyr Pro Thr Tyr Tyr Ile
1 5 10 15

Cys Arg Ser Tyr Glu Asp Cys Cys Gly Ser Arg Cys Cys Val Arg Ala
20 25 30

Leu Ser Ile Gln Arg Leu Trp Tyr Phe Trp Phe Leu Leu Met Met Gly
35 40 45

Val Leu Phe Cys Cys Gly Ala Gly Phe Phe Ile Arg Arg Arg Met Tyr
50 55 60

Pro Pro Pro Leu Ile Glu Glu Pro Thr Phe Asn Val Ser Tyr Thr Arg
65 70 75 80

Gln Pro Pro Asn Pro Ala Pro Gly Ala Gln Gln Met Gly Pro Pro Tyr
85 90 95

Tyr Thr Asp Pro Gly Gly Pro Gly Met Asn Pro Val Gly Asn Thr Met
100 105 110

Ala Met Ala Phe Gln Val Gln Pro Asn Ser Pro His Gly Gly Thr Thr
115 120 125

Tyr Pro Pro Pro Pro Ser Tyr Cys Asn Thr Pro Pro Pro Pro Tyr Glu
130 135 140

Gln Val Val Lys Asp Lys
145 150

<210> 45

<211> 2044

<212> DNA

<213> Homo sapiens

<400> 45

gtcgacccac gcgtccgggg aattgcagca ggaaaatatg tgaagagttt ttaaaccac 60
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ggaccatgtt ggaaaccttg tcaagacagt ggattgtctc acacagaatg gaaatgtggc 180
ttctgattct ggtggcgtat atgttcaga gaaatgtgaa ttcagtacat atgccaaacta 240
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gctagacatt ttcaccttgt tgccacagag acataacact acctcaggaa gctgagctgc 1860
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ctcagaataa ggccaagttt tatagttgca tctcaggga gaaaatttta taggatgttt 1980
atgagttctc caataaatgc attctgcatt acataaaaaa aaaaaaaaaa aaaagggcgg 2040
ccgc 2044

<210> 46

<211> 1269

<212> DNA

<213> Homo sapiens

<400> 46

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accaacaata tgaacatgag ccgagcaagt gtatatgctg cccacactct tgctggaaca 900
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attcctgaat gggctcacgt ggatttcac tggggttttg atgctcctca ccgtatgtac 1200
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gccgtattg 1269

<210> 47

<211> 423

<212> PRT

<213> Homo sapiens

<400> 47

Met Leu Glu Thr Leu Ser Arg Gln Trp Ile Val Ser His Arg Met Glu

1

5

10

15

Met Trp Leu Leu Ile Leu Val Ala Tyr Met Phe Gln Arg Asn Val Asn
20 25 30

Ser Val His Met Pro Thr Lys Ala Val Asp Pro Glu Ala Phe Met Asn
35 40 45

Ile Ser Glu Ile Ile Gln His Gln Gly Tyr Pro Cys Glu Glu Tyr Glu
50 55 60

Val Ala Thr Glu Asp Gly Tyr Ile Leu Ser Val Asn Arg Ile Pro Arg
65 70 75 80

Gly Leu Val Gln Pro Lys Lys Thr Gly Ser Arg Pro Val Val Leu Leu
85 90 95

Gln His Gly Leu Val Gly Gly Ala Ser Asn Trp Ile Ser Asn Leu Pro
100 105 110

Asn Asn Ser Leu Gly Phe Ile Leu Ala Asp Ala Gly Phe Asp Val Trp
115 120 125

Met Gly Asn Ser Arg Gly Asn Ala Trp Ser Arg Lys His Lys Thr Leu
130 135 140

Ser Ile Asp Gln Asp Glu Phe Trp Ala Phe Ser Tyr Asp Glu Met Ala
145 150 155 160

Arg Phe Asp Leu Pro Ala Val Ile Asn Phe Ile Leu Gln Lys Thr Gly
165 170 175

Gln Glu Lys Ile Tyr Tyr Val Gly Tyr Ser Gln Gly Thr Thr Met Gly
180 185 190

Phe Ile Ala Phe Ser Thr Met Pro Glu Leu Ala Gln Lys Ile Lys Met
195 200 205

Tyr Phe Ala Leu Ala Pro Ile Ala Thr Val Lys His Ala Lys Ser Pro
210 215 220

Gly Thr Lys Phe Leu Leu Leu Pro Asp Met Met Ile Lys Gly Leu Phe
225 230 235 240

Gly Lys Lys Glu Phe Leu Tyr Gln Thr Arg Phe Leu Arg Gln Leu Val
245 250 255

Ile Tyr Leu Cys Gly Gln Val Ile Leu Asp Gln Ile Cys Ser Asn Ile
260 265 270

Met Leu Leu Leu Gly Gly Phe Asn Thr Asn Asn Met Asn Met Ser Arg
 275 280 285

Ala Ser Val Tyr Ala Ala His Thr Leu Ala Gly Thr Ser Val Gln Asn
 290 295 300

Ile Leu His Trp Ser Gln Ala Val Asn Ser Gly Glu Leu Arg Ala Phe
 305 310 315 320

Asp Trp Gly Ser Glu Thr Lys Asn Leu Glu Lys Cys Asn Gln Pro Thr
 325 330 335

Pro Val Arg Tyr Arg Val Arg Asp Met Thr Val Pro Thr Ala Met Trp
 340 345 350

Thr Gly Gly Gln Asp Trp Leu Ser Asn Pro Glu Asp Val Lys Met Leu
 355 360 365

Leu Ser Glu Val Thr Asn Leu Ile Tyr His Lys Asn Ile Pro Glu Trp
 370 375 380

Ala His Val Asp Phe Ile Trp Gly Leu Asp Ala Pro His Arg Met Tyr
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Asn Glu Ile Ile His Leu Met Gln Gln Glu Glu Thr Asn Leu Ser Gln
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Gly Arg Cys Glu Ala Val Leu
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<210> 48

<211> 33

<212> PRT

<213> Homo sapiens

<400> 48

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Met Trp Leu Leu Ile Leu Val Ala Tyr Met Phe Gln Arg Asn Val Asn
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Ser

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<211> 390
 <212> PRT
 <213> Homo sapiens

<400> 49

Val His Met Pro Thr Lys Ala Val Asp Pro Glu Ala Phe Met Asn Ile
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Ser Glu Ile Ile Gln His Gln Gly Tyr Pro Cys Glu Glu Tyr Glu Val
 20 25 30

Ala Thr Glu Asp Gly Tyr Ile Leu Ser Val Asn Arg Ile Pro Arg Gly
 35 40 45

Leu Val Gln Pro Lys Lys Thr Gly Ser Arg Pro Val Val Leu Leu Gln
 50 55 60

His Gly Leu Val Gly Gly Ala Ser Asn Trp Ile Ser Asn Leu Pro Asn
 65 70 75 80

Asn Ser Leu Gly Phe Ile Leu Ala Asp Ala Gly Phe Asp Val Trp Met
 85 90 95

Gly Asn Ser Arg Gly Asn Ala Trp Ser Arg Lys His Lys Thr Leu Ser
 100 105 110

Ile Asp Gln Asp Glu Phe Trp Ala Phe Ser Tyr Asp Glu Met Ala Arg
 115 120 125

Phe Asp Leu Pro Ala Val Ile Asn Phe Ile Leu Gln Lys Thr Gly Gln
 130 135 140

Glu Lys Ile Tyr Tyr Val Gly Tyr Ser Gln Gly Thr Thr Met Gly Phe
 145 150 155 160

Ile Ala Phe Ser Thr Met Pro Glu Leu Ala Gln Lys Ile Lys Met Tyr
 165 170 175

Phe Ala Leu Ala Pro Ile Ala Thr Val Lys His Ala Lys Ser Pro Gly
 180 185 190

Thr Lys Phe Leu Leu Leu Pro Asp Met Met Ile Lys Gly Leu Phe Gly
 195 200 205

Lys Lys Glu Phe Leu Tyr Gln Thr Arg Phe Leu Arg Gln Leu Val Ile
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Tyr Leu Cys Gly Gln Val Ile Leu Asp Gln Ile Cys Ser Asn Ile Met

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Leu His Trp Ser Gln Ala Val Asn Ser Gly Glu Leu Arg Ala Phe Asp			
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Trp Gly Ser Glu Thr Lys Asn Leu Glu Lys Cys Asn Gln Pro Thr Pro			
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Val Arg Tyr Arg Val Arg Asp Met Thr Val Pro Thr Ala Met Trp Thr			
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Gly Gly Gln Asp Trp Leu Ser Asn Pro Glu Asp Val Lys Met Leu Leu			
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Ser Glu Val Thr Asn Leu Ile Tyr His Lys Asn Ile Pro Glu Trp Ala			
340	345	350	
His Val Asp Phe Ile Trp Gly Leu Asp Ala Pro His Arg Met Tyr Asn			
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Glu Ile Ile His Leu Met Gln Gln Glu Glu Thr Asn Leu Ser Gln Gly			
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Arg Cys Glu Ala Val Leu			
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<210> 50

<211> 221

<212> PRT

<213> Homo sapiens

<400> 50

Val His Met Pro Thr Lys Ala Val Asp Pro Glu Ala Phe Met Asn Ile
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Ala Thr Glu Asp Gly Tyr Ile Leu Ser Val Asn Arg Ile Pro Arg Gly
35 40 45

Leu Val Gln Pro Lys Lys Thr Gly Ser Arg Pro Val Val Leu Leu Gln
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His Gly Leu Val Gly Gly Ala Ser Asn Trp Ile Ser Asn Leu Pro Asn
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Asn Ser Leu Gly Phe Ile Leu Ala Asp Ala Gly Phe Asp Val Trp Met
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Gly Asn Ser Arg Gly Asn Ala Trp Ser Arg Lys His Lys Thr Leu Ser
 100 105 110

Ile Asp Gln Asp Glu Phe Trp Ala Phe Ser Tyr Asp Glu Met Ala Arg
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Phe Asp Leu Pro Ala Val Ile Asn Phe Ile Leu Gln Lys Thr Gly Gln
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Glu Lys Ile Tyr Tyr Val Gly Tyr Ser Gln Gly Thr Thr Met Gly Phe
 145 150 155 160

Ile Ala Phe Ser Thr Met Pro Glu Leu Ala Gln Lys Ile Lys Met Tyr
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Phe Ala Leu Ala Pro Ile Ala Thr Val Lys His Ala Lys Ser Pro Gly
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Thr Lys Phe Leu Leu Leu Pro Asp Met Met Ile Lys Gly Leu Phe Gly
 195 200 205

Lys Lys Glu Phe Leu Tyr Gln Thr Arg Phe Leu Arg Gln
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<210> 51

<211> 25

<212> PRT

<213> Homo sapiens

<400> 51

Leu Val Ile Tyr Leu Cys Gly Gln Val Ile Leu Asp Gln Ile Cys Ser
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Asn Ile Met Leu Leu Leu Gly Gly Phe
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<210> 52

<211> 144
 <212> PRT
 <213> Homo sapiens

<400> 52

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Val	Asn	Ser	Gly	Glu	Leu	Arg	Ala	Phe	Asp	Trp	Gly	Ser	Glu	Thr	Lys
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Ser	Asn	Pro	Glu	Asp	Val	Lys	Met	Leu	Leu	Ser	Glu	Val	Thr	Asn	Leu
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Ile	Tyr	His	Lys	Asn	Ile	Pro	Glu	Trp	Ala	His	Val	Asp	Phe	Ile	Trp
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Gly	Leu	Asp	Ala	Pro	His	Arg	Met	Tyr	Asn	Glu	Ile	Ile	His	Leu	Met
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<210> 53
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 <212> DNA
 <213> Homo sapiens

<400> 53

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<211> 1029

<212> DNA

<213> Homo sapiens

<400> 54

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<211> 343

<212> PRT

<213> Homo sapiens

<400> 55

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20 25 30

Thr Ala Leu Ala Thr Phe Ile Val Ile Leu Pro Gly Ile Arg Gly Lys
35 40 45

Thr Arg Leu Phe Trp Leu Leu Arg Val Val Thr Ser Leu Phe Ile Gly
50 55 60

Ala Ala Ile Leu Ala Val Asn Phe Ser Ser Glu Trp Ser Val Gly Gln
65 70 75 80

Val Ser Thr Asn Thr Ser Tyr Lys Ala Phe Ser Ser Glu Trp Ile Ser
85 90 95

Ala Asp Ile Gly Leu Gln Val Gly Leu Gly Gly Val Asn Ile Thr Leu
100 105 110

Thr Gly Thr Pro Val Gln Gln Leu Asn Glu Thr Ile Asn Tyr Asn Glu
115 120 125

Glu Phe Thr Trp Arg Leu Gly Glu Asn Tyr Ala Glu Glu Cys Ala Lys
130 135 140

Ala Leu Glu Lys Gly Leu Pro Asp Pro Val Leu Tyr Leu Ala Glu Lys
145 150 155 160

Phe Thr Pro Arg Ser Pro Cys Gly Leu Tyr Arg Gln Tyr Arg Leu Ala
165 170 175

Gly His Tyr Thr Ser Ala Met Leu Trp Val Ala Phe Leu Cys Trp Leu

180	185	190
Leu Ala Asn Val Met Leu Ser Met Pro Val Leu Val Tyr Gly Gly Tyr		
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Met Leu Leu Ala Thr Gly Ile Phe Gln Leu Leu Ala Leu Leu Phe Phe		
210	215	220
Ser Met Ala Thr Ser Leu Thr Ser Pro Cys Pro Leu His Leu Gly Ala		
225	230	235 240
Ser Val Leu His Thr His His Gly Pro Ala Phe Trp Ile Thr Leu Thr		
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Thr Gly Leu Leu Cys Val Leu Leu Gly Leu Ala Met Ala Val Ala His		
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Arg Met Gln Pro His Arg Leu Lys Ala Phe Phe Asn Gln Ser Val Asp		
	275	280 285
Glu Asp Pro Met Leu Glu Trp Ser Pro Glu Glu Gly Gly Leu Leu Ser		
	290	295 300
Pro Arg Tyr Arg Ser Met Ala Asp Ser Pro Lys Ser Gln Asp Ile Pro		
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Leu Ser Glu Ala Ser Ser Thr Lys Ala Tyr Cys Lys Glu Ala His Pro		
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<210> 56

<211> 23

<212> PRT

<213> Homo sapiens

<400> 56

Met Ala Thr Leu Gly His Thr Phe Pro Phe Tyr Ala Gly Pro Lys Pro
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Thr Phe Pro Met Asp Thr Thr
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<210> 57

<211> 112

<212> PRT

<213> Homo sapiens

<400> 57

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1 5 10 15

Tyr Lys Ala Phe Ser Ser Glu Trp Ile Ser Ala Asp Ile Gly Leu Gln
20 25 30

Val Gly Leu Gly Gly Val Asn Ile Thr Leu Thr Gly Thr Pro Val Gln
35 40 45

Gln Leu Asn Glu Thr Ile Asn Tyr Asn Glu Glu Phe Thr Trp Arg Leu
50 55 60

Gly Glu Asn Tyr Ala Glu Glu Cys Ala Lys Ala Leu Glu Lys Gly Leu
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Pro Asp Pro Val Leu Tyr Leu Ala Glu Lys Phe Thr Pro Arg Ser Pro
85 90 95

Cys Gly Leu Tyr Arg Gln Tyr Arg Leu Ala Gly His Tyr Thr Ser Ala
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<210> 58

<211> 22

<212> PRT

<213> Homo sapiens

<400> 58

Thr Ser Leu Thr Ser Pro Cys Pro Leu His Leu Gly Ala Ser Val Leu
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His Thr His His Gly Pro
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<210> 59

<211> 19

<212> PRT

<213> Homo sapiens

<400> 59

Leu Ala Ser Ile Ile Met Ile Phe Leu Thr Ala Leu Ala Thr Phe Ile
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Val Ile Leu

<210> 60

<211> 20

<212> PRT

<213> Homo sapiens

<400> 60

Leu Phe Trp Leu Leu Arg Val Val Thr Ser Leu Phe Ile Gly Ala Ala
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Ile Leu Ala Val
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<210> 61

<211> 22

<212> PRT

<213> Homo sapiens

<400> 61

Met Leu Trp Val Ala Phe Leu Cys Trp Leu Leu Ala Asn Val Met Leu
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Ser Met Pro Val Leu Val
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<210> 62

<211> 17

<212> PRT

<213> Homo sapiens

<400> 62

Leu Ala Thr Gly Ile Phe Gln Leu Leu Ala Leu Leu Phe Phe Ser Met
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Ala

<210> 63

<211> 22

<212> PRT

<213> Homo sapiens

<400> 63

Ala Phe Trp Ile Thr Leu Thr Thr Gly Leu Leu Cys Val Leu Leu Gly
1 5 10 15

Leu Ala Met Ala Val Ala
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<210> 64

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<212> PRT

<213> Homo sapiens

<400> 64

Pro Gly Ile Arg Gly Lys Thr Arg
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<213> Homo sapiens

<400> 65

Tyr Gly Gly Tyr Met Leu
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<211> 72

<212> PRT

<213> Homo sapiens

<400> 66

His Arg Met Gln Pro His Arg Leu Lys Ala Phe Phe Asn Gln Ser Val
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Ser Pro Arg Tyr Arg Ser Met Ala Asp Ser Pro Lys Ser Gln Asp Ile
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Pro Leu Ser Glu Ala Ser Ser Thr Lys Ala Tyr Cys Lys Glu Ala His
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Pro Lys Asp Pro Asp Cys Ala Leu
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<210> 67
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<212> DNA
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<400> 67.

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<400> 68

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 <212> PRT
 <213> Mus sp.

<400> 69

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Phe Thr Ala Asn Gly Ala Asp Tyr Arg Gly Thr Gln Ser Trp Thr Ala
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Leu Gln Gly Gly Lys Pro Cys Leu Phe Trp Asn Glu Thr Phe Gln His
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His Asn Tyr Cys Arg Asn Pro Asp Gly Asp Val Ser Pro Trp Cys Tyr
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Val Ala Glu His Glu Asp Gly Val Tyr Trp Lys Tyr Cys Glu Ile Pro
100 105 110

Ala Cys Gln Met Pro Gly Asn Leu Gly Cys Tyr Lys Asp His Gly Asn
115 120 125

Pro Pro Pro Leu Thr Gly Thr Ser Lys Thr Ser Asn Lys Leu Thr Ile
130 135 140

Gln Thr Cys Ile Ser Phe Cys Arg Ser Gln Arg Phe Lys Phe Ala Gly
145 150 155 160

Met Glu Ser Gly Tyr Ala Cys Phe Cys Gly Asn Asn Pro Asp Tyr Trp
165 170 175

Lys His Gly Glu Ala Ala Ser Thr Glu Cys Asn Ser Val Cys Phe Gly
180 185 190

Asp His Thr Gln Pro Cys Gly Gly Asp Gly Arg Ile Ile Leu Phe Asp
195 200 205

Thr Leu Val Gly Ala Cys Gly Gly Asn Tyr Ser Ala Met Ala Ala Val
210 215 220

Val Tyr Ser Pro Asp Phe Pro Asp Thr Tyr Ala Thr Gly Arg Val Cys
225 230 235 240

Tyr Trp Thr Ile Arg Val Pro Gly Ala Ser Arg Ile His Phe Asn Phe
245 250 255

Thr Leu Phe Asp Ile Arg Asp Ser Ala Asp Met Val Glu Leu Leu Asp
260 265 270

Gly Tyr Thr His Arg Val Leu Val Arg Leu Ser Gly Arg Ser Arg Pro
275 280 285

Pro Leu Ser Phe Asn Val Ser Leu Asp Phe Val Ile Leu Tyr Phe Phe
290 295 300

Ser Asp Arg Ile Asn Gln Ala Gln Gly Phe Ala Val Leu Tyr Gln Ala
305 310 315 320

Thr Lys Glu Glu Pro Pro Gln Glu Arg Pro Ala Val Asn Gln Thr Leu
 325 330 335

Ala Glu Val Ile Thr Glu Gln Ala Asn Leu Ser Val Ser Ala Ala His
 340 345 350

Ser Ser Lys Val Leu Tyr Val Ile Thr Pro Ser Pro Ser His Pro Pro
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Gln Thr Ala Gln Val Ala Ile Pro Gly His Arg Gln Leu Gly Pro Thr
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Ala Thr Glu Trp Lys Asp Gly Leu Cys Thr Ala Trp Arg Pro Ser Ser
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Leu Asn Leu Ile Glu Ser Leu His Gln Glu Thr Leu Gly Thr Val Val
 420 425 430

Ser Leu Gly Leu Leu Glu Ile Ser Gly Pro Phe Ser Met Asn Leu Pro
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Leu Gln Ser Pro Ser Leu Arg Arg Ser Ser Arg Val Arg Val Asn Lys
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Met Thr Ala Ile Pro Ser
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<210> 70

<211> 760

<212> PRT

<213> Mus sp.

<400> 70

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Thr Gly Gly Gln Gly Pro Met Pro Arg Val Lys Tyr His Ala Gly Asp
 35 40 45

Gly His Arg Ala Leu Ser Phe Phe Gln Gln Lys Gly Leu Arg Asp Phe
 50 55 60

Asp	Thr	Leu	Leu	Leu	Ser	Asp	Asp	Gly	Asn	Thr	Leu	Tyr	Val	Gly	Ala	65	70	75	80
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Ala Val Cys Ala Phe Ser Leu Thr Asp Ile Glu Arg Val Phe Lys Gly
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Lys Tyr Lys Glu Leu Asn Lys Glu Thr Ser Arg Trp Thr Thr Tyr Arg
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Gly Ser Glu Val Ser Pro Arg Pro Gly Ser Cys Ser Met Gly Pro Ser
 370 375 380

Ser Asp Lys Ala Leu Thr Phe Met Lys Asp His Phe Leu Met Asp Glu
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His Val Val Gly Thr Pro Leu Leu Val Lys Ser Gly Val Glu Tyr Thr
 405 410 415

Arg Leu Ala Val Glu Ser Ala Arg Gly Leu Asp Gly Ser Ser His Val
 420 425 430

Val Met Tyr Leu Gly Thr Ser Thr Gly Pro Leu His Lys Ala Val Val
 435 440 445

Pro Gln Asp Ser Ser Ala Tyr Leu Val Glu Glu Ile Gln Leu Ser Pro
 450 455 460

Asp Ser Glu Pro Val Arg Asn Leu Gln Leu Ala Pro Ala Gln Gly Ala
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Val Phe Ala Gly Phe Ser Gly Gly Ile Trp Arg Val Pro Arg Ala Asn
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Cys Ser Val Tyr Glu Ser Cys Val Asp Cys Val Leu Ala Arg Asp Pro
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His Cys Ala Trp Asp Pro Glu Ser Arg Leu Cys Ser Leu Leu Ser Gly
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Ser Thr Lys Pro Trp Lys Gln Asp Met Glu Arg Gly Asn Pro Glu Trp
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Val Cys Thr Arg Gly Pro Met Ala Arg Ser Pro Arg Arg Gln Ser Pro
 545 550 555 560

Pro Gln Leu Ile Lys Glu Val Leu Thr Val Pro Asn Ser Ile Leu Glu
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Leu Arg Cys Pro His Leu Ser Ala Leu Ala Ser Tyr His Trp Ser His
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Gly Arg Ala Lys Ile Ser Glu Ala Ser Ala Thr Val Tyr Asn Gly Ser
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Ala Thr Glu Asn Gly Tyr Ser Tyr Pro Val Val Ser Tyr Trp Val Asp
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Ser Gln Asp Gln Pro Leu Ala Leu Asp Pro Glu Leu Ala Gly Val Pro
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Arg Glu Arg Val Gln Val Pro Leu Thr Arg Val Gly Gly Gly Ala Ser
660 665 670

Met Ala Ala Gln Arg Ser Tyr Trp Pro His Phe Leu Ile Val Thr Val
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Leu Leu Ala Ile Val Leu Leu Gly Val Leu Thr Leu Leu Leu Ala Ser
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Pro Leu Gly Ala Leu Arg Ala Arg Gly Lys Val Gln Gly Cys Gly Met
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Leu Pro Pro Arg Glu Lys Ala Pro Leu Ser Arg Asp Gln His Leu Gln
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<211> 3046

<212> DNA

<213> Mus sp.

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 <212> DNA
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<400> -72

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aaaatcaaga agcacagtca gagctgcccc tgggattgca tcagggaacg gctgatcaag 2460
gcattcagtg tccatgacta aatcttatct ttttgatagc aaatcctttt aagaaactga 2520

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acaattgcta aggctcagca attttatact ccaatgtctg tgtaaggtaa attttgtttg 2580
ccattgagcc cacattggaa ttccttctga cgtcaacact gacaatgcct atggaaattg 2640
cacttctggg tatatgtccc agcatccttg ttttcttatg tttggtgagt aaggctcacc 2700
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ttttgataga gtctgttttc ctatgtattt aaaaaataat aaaagtgaat ttagtcaaaa 2880
aaaaaaaaa aaaaaaaaaa aaaaagggcg gccgc 2915

<210> 73

<211> 516

<212> DNA

<213> Mus sp.

<400> 73

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tcctatgaag actgctgtgg ctccagggtg tgtgtgaggg ccctttccat acagaggctg 180
tggtattttt ggttcctgct gatgatgggt gtgctgttct gctgtggtgc cggtttcttc 240
attcgccggc gcatgtatcc gccaccactc attgaggagc ccacattcaa tgtgtcctat 300
accaggcagc caccaaacc tgtccagga gcacagcaaa tgggaccgcc atattacacc 360
gaccctggag gaccgggat gaatcctgtt ggcaatacca tggctatggc tttccaggtc 420
cagcccaatt cacctcacgg aggcacaact taccacccc ctccttccta ctgcaacacg 480
cctccacccc cctatgaaca ggtggtgaag gacaag 516

<210> 74

<211> 172

<212> PRT

<213> Mus sp.

<400> 74

Met Gly Arg Arg Leu Gly Arg Val Ala Ala Leu Leu Leu Gly Leu Leu
1 5 10 15

Val Glu Cys Thr Glu Ala Lys Lys His Cys Trp Tyr Phe Glu Gly Leu
20 25 30

Tyr Pro Thr Tyr Tyr Ile Cys Arg Ser Tyr Glu Asp Cys Cys Gly Ser
35 40 45

Arg Cys Cys Val Arg Ala Leu Ser Ile Gln Arg Leu Trp Tyr Phe Trp
50 55 60

Phe Leu Leu Met Met Gly Val Leu Phe Cys Cys Gly Ala Gly Phe Phe
65 70 75 80

Ile Arg Arg Arg Met Tyr Pro Pro Pro Leu Ile Glu Glu Pro Thr Phe
85 90 95

Asn Val Ser Tyr Thr Arg Gln Pro Pro Asn Pro Ala Pro Gly Ala Gln
 100 105 110

Gln Met Gly Pro Pro Tyr Tyr Thr Asp Pro Gly Gly Pro Gly Met Asn
 115 120 125

Pro Val Gly Asn Thr Met Ala Met Ala Phe Gln Val Gln Pro Asn Ser
 130 135 140

Pro His Gly Gly Thr Thr Tyr Pro Pro Pro Pro Ser Tyr Cys Asn Thr
 145 150 155 160

Pro Pro Pro Pro Tyr Glu Gln Val Val Lys Asp Lys
 165 170

<210> 75

<211> 398

<212> PRT

<213> Homo sapiens

<400> 75

Met Trp Leu Leu Leu Thr Met Ala Ser Leu Ile Ser Val Leu Gly Thr
 1 5 10 15

Thr His Gly Leu Phe Gly Lys Leu His Pro Gly Ser Pro Glu Val Thr
 20 25 30

Met Asn Ile Ser Gln Met Ile Thr Tyr Trp Gly Tyr Pro Asn Glu Glu
 35 40 45

Tyr Glu Val Val Thr Glu Asp Gly Tyr Ile Leu Glu Val Asn Arg Ile
 50 55 60

Pro Tyr Gly Lys Lys Asn Ser Gly Asn Thr Gly Gln Arg Pro Val Val
 65 70 75 80

Phe Leu Gln His Gly Leu Leu Ala Ser Ala Thr Asn Trp Ile Ser Asn
 85 90 95

Leu Pro Asn Asn Ser Leu Ala Phe Ile Leu Ala Asp Ala Gly Tyr Asp
 100 105 110

Val Trp Leu Gly Asn Ser Arg Gly Asn Thr Trp Ala Arg Arg Asn Leu
 115 120 125

Tyr Tyr Ser Pro Asp Ser Val Glu Phe Trp Ala Phe Ser Phe Asp Glu
 130 135 140

Met Ala Lys Tyr Asp Leu Pro Ala Thr Ile Asp Phe Ile Val Lys Lys
 145 150 155 160
 Thr Gly Gln Lys Gln Leu His Tyr Val Gly His Ser Gln Gly Thr Thr
 165 170 175
 Ile Gly Phe Ile Ala Phe Ser Thr Asn Pro Ser Leu Ala Lys Arg Ile
 180 185 190
 Lys Thr Phe Tyr Ala Leu Ala Pro Val Ala Thr Val Lys Tyr Thr Lys
 195 200 205
 Ser Leu Ile Asn Lys Leu Arg Phe Val Pro Gln Ser Leu Phe Lys Phe
 210 215 220
 Ile Phe Gly Asp Lys Ile Phe Tyr Pro His Asn Phe Phe Asp Gln Phe
 225 230 235 240
 Leu Ala Thr Glu Val Cys Ser Arg Glu Met Leu Asn Leu Leu Cys Ser
 245 250 255
 Asn Ala Leu Phe Ile Ile Cys Gly Phe Asp Ser Lys Asn Phe Asn Thr
 260 265 270
 Ser Arg Leu Asp Val Tyr Leu Ser His Asn Pro Ala Gly Thr Ser Val
 275 280 285
 Gln Asn Met Phe His Trp Thr Gln Ala Val Lys Ser Gly Lys Phe Gln
 290 295 300
 Ala Tyr Asp Trp Gly Ser Pro Val Gln Asn Arg Met His Tyr Asp Gln
 305 310 315 320
 Ser Gln Pro Pro Tyr Tyr Asn Val Thr Ala Met Asn Val Pro Ile Ala
 325 330 335
 Val Trp Asn Gly Gly Lys Asp Leu Leu Ala Asp Pro Gln Asp Val Gly
 340 345 350
 Leu Leu Leu Pro Lys Leu Pro Asn Leu Ile Tyr His Lys Glu Ile Pro
 355 360 365
 Phe Tyr Asn His Leu Asp Phe Ile Trp Ala Met Asp Ala Pro Gln Glu
 370 375 380
 Val Tyr Asn Asp Ile Val Ser Met Ile Ser Glu Asp Lys Lys
 385 390 395

<210> 76
 <211> 760
 <212> PRT
 <213> Mus sp.

<400> 76

Met Ala Leu Pro Ser Leu Gly Gln Asp Ser Trp Ser Leu Leu Arg Val
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Phe Phe Phe Gln Leu Phe Leu Leu Pro Ser Leu Pro Pro Ala Ser Gly
 20 25 30

Thr Gly Gly Gln Gly Pro Met Pro Arg Val Lys Tyr His Ala Gly Asp
 35 40 45

Gly His Arg Ala Leu Ser Phe Phe Gln Gln Lys Gly Leu Arg Asp Phe
 50 55 60

Asp Thr Leu Leu Leu Ser Asp Asp Gly Asn Thr Leu Tyr Val Gly Ala
 65 70 75 80

Arg Glu Thr Val Leu Ala Leu Asn Ile Gln Asn Pro Gly Ile Pro Arg
 85 90 95

Leu Lys Asn Met Ile Pro Trp Pro Ala Ser Glu Arg Lys Lys Thr Glu
 100 105 110

Cys Ala Phe Lys Lys Lys Ser Asn Glu Thr Gln Cys Phe Asn Phe Ile
 115 120 125

Arg Val Leu Val Ser Tyr Asn Ala Thr His Leu Tyr Ala Cys Gly Thr
 130 135 140

Phe Ala Phe Ser Pro Ala Cys Thr Phe Ile Glu Leu Gln Asp Ser Leu
 145 150 155 160

Leu Leu Pro Ile Leu Ile Asp Lys Val Met Asp Gly Lys Gly Gln Ser
 165 170 175

Pro Leu Thr Leu Phe Thr Ser Thr Gln Ala Val Leu Val Asp Gly Met
 180 185 190

Leu Tyr Ser Gly Thr Met Asn Asn Phe Leu Gly Ser Glu Pro Ile Leu
 195 200 205

Met Arg Thr Leu Gly Ser His Pro Val Leu Lys Thr Asp Ile Phe Leu

210		215		220	
Arg Trp Leu His Ala Asp Ala Ser Phe Val Ala Ala Ile Pro Ser Thr					
225		230		235	240
Gln Val Val Tyr Phe Phe Phe Glu Glu Thr Ala Ser Glu Phe Asp Phe					
	245		250		255
Phe Glu Glu Leu Tyr Ile Ser Arg Val Ala Gln Val Cys Lys Asn Asp					
	260		265		270
Val Gly Gly Glu Lys Leu Leu Gln Lys Lys Trp Thr Thr Phe Leu Lys					
	275		280		285
Ala Gln Leu Leu Cys Ala Gln Pro Gly Gln Leu Pro Phe Asn Ile Ile					
	290		295		300
Arg His Ala Val Leu Leu Pro Ala Asp Ser Pro Ser Val Ser Arg Ile					
305		310		315	320
Tyr Ala Val Phe Thr Ser Gln Trp Gln Val Gly Gly Thr Arg Ser Ser					
	325		330		335
Ala Val Cys Ala Phe Ser Leu Thr Asp Ile Glu Arg Val Phe Lys Gly					
	340		345		350
Lys Tyr Lys Glu Leu Asn Lys Glu Thr Ser Arg Trp Thr Thr Tyr Arg					
	355		360		365
Gly Ser Glu Val Ser Pro Arg Pro Gly Ser Cys Ser Met Gly Pro Ser					
	370		375		380
Ser Asp Lys Ala Leu Thr Phe Met Lys Asp His Phe Leu Met Asp Glu					
385		390		395	400
His Val Val Gly Thr Pro Leu Leu Val Lys Ser Gly Val Glu Tyr Thr					
	405		410		415
Arg Leu Ala Val Glu Ser Ala Arg Gly Leu Asp Gly Ser Ser His Val					
	420		425		430
Val Met Tyr Leu Gly Thr Ser Thr Gly Pro Leu His Lys Ala Val Val					
	435		440		445
Pro Gln Asp Ser Ser Ala Tyr Leu Val Glu Glu Ile Gln Leu Ser Pro					
	450		455		460
Asp Ser Glu Pro Val Arg Asn Leu Gln Leu Ala Pro Ala Gln Gly Ala					

465		470		475		480
Val Phe Ala Gly Phe Ser Gly Gly Ile Trp Arg Val Pro Arg Ala Asn						
	485			490		495
Cys Ser Val Tyr Glu Ser Cys Val Asp Cys Val Leu Ala Arg Asp Pro						
	500			505		510
His Cys Ala Trp Asp Pro Glu Ser Arg Leu Cys Ser Leu Leu Ser Gly						
	515			520		525
Ser Thr Lys Pro Trp Lys Gln Asp Met Glu Arg Gly Asn Pro Glu Trp						
	530			535		540
Val Cys Thr Arg Gly Pro Met Ala Arg Ser Pro Arg Arg Gln Ser Pro						
	545			550		555
						560
Pro Gln Leu Ile Lys Glu Val Leu Thr Val Pro Asn Ser Ile Leu Glu						
				565		570
						575
Leu Arg Cys Pro His Leu Ser Ala Leu Ala Ser Tyr His Trp Ser His						
	580			585		590
Gly Arg Ala Lys Ile Ser Glu Ala Ser Ala Thr Val Tyr Asn Gly Ser						
	595			600		605
Leu Leu Leu Leu Pro Gln Asp Gly Val Gly Gly Leu Tyr Gln Cys Val						
	610			615		620
Ala Thr Glu Asn Gly Tyr Ser Tyr Pro Val Val Ser Tyr Trp Val Asp						
	625			630		635
						640
Ser Gln Asp Gln Pro Leu Ala Leu Asp Pro Glu Leu Ala Gly Val Pro						
				645		650
						655
Arg Glu Arg Val Gln Val Pro Leu Thr Arg Val Gly Gly Gly Ala Ser						
	660			665		670
Met Ala Ala Gln Arg Ser Tyr Trp Pro His Phe Leu Ile Val Thr Val						
	675			680		685
Leu Leu Ala Ile Val Leu Leu Gly Val Leu Thr Leu Leu Leu Ala Ser						
	690			695		700
Pro Leu Gly Ala Leu Arg Ala Arg Gly Lys Val Gln Gly Cys Gly Met						
	705			710		715
						720
Leu Pro Pro Arg Glu Lys Ala Pro Leu Ser Arg Asp Gln His Leu Gln						

725

730

735

Pro Ser Lys Asp His Arg Thr Ser Ala Ser Asp Val Asp Ala Asp Asn
 740 745 750

Asn His Leu Gly Ala Glu Val Ala
 755 760

<210> 77

<211> 3046

<212> DNA

<213> Mus sp.

<400> 77

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 gggctcgaga gaccgtcctg gccttgaata tccagaaccc aggaatcccc aggctaaaga 360
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 gtcacagaca atttattttt tattaaaaaa gatataagct ttaaag 3046

<210> 78

<211> 1436

<212> PRT

<213> Bos sp.

<400> 78

Met Ala Leu Gly Arg His Leu Ser Leu Arg Gly Leu Cys Val Leu Leu
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Leu Gly Thr Met Val Gly Gly Gln Ala Leu Glu Leu Arg Leu Lys Asp
 20 25 30

Gly Val His Arg Cys Glu Gly Arg Val Glu Val Lys His Gln Gly Glu
 35 40 45

Trp Gly Thr Val Asp Gly Tyr Arg Trp Thr Leu Lys Asp Ala Ser Val
 50 55 60

Val Cys Arg Gln Leu Gly Cys Gly Ala Ala Ile Gly Phe Pro Gly Gly
 65 70 75 80

Ala Tyr Phe Gly Pro Gly Leu Gly Pro Ile Trp Leu Leu Tyr Thr Ser
 85 90 95

Cys Glu Gly Thr Glu Ser Thr Val Ser Asp Cys Glu His Ser Asn Ile
 100 105 110

Lys Asp Tyr Arg Asn Asp Gly Tyr Asn His Gly Arg Asp Ala Gly Val
 115 120 125

Val Cys Ser Gly Phe Val Arg Leu Ala Gly Gly Asp Gly Pro Cys Ser
130 135 140

Gly Arg Val Glu Val His Ser Gly Glu Ala Trp Ile Pro Val Ser Asp
145 150 155 160

Gly Asn Phe Thr Leu Ala Thr Ala Gln Ile Ile Cys Ala Glu Leu Gly
165 170 175

Cys Gly Lys Ala Val Ser Val Leu Gly His Glu Leu Phe Arg Glu Ser
180 185 190

Ser Ala Gln Val Trp Ala Glu Glu Phe Arg Cys Glu Gly Glu Glu Pro
195 200 205

Glu Leu Trp Val Cys Pro Arg Val Pro Cys Pro Gly Gly Thr Cys His
210 215 220

His Ser Gly Ser Ala Gln Val Val Cys Ser Ala Tyr Ser Glu Val Arg
225 230 235 240

Leu Met Thr Asn Gly Ser Ser Gln Cys Glu Gly Gln Val Glu Met Asn
245 250 255

Ile Ser Gly Gln Trp Arg Ala Leu Cys Ala Ser His Trp Ser Leu Ala
260 265 270

Asn Ala Asn Val Ile Cys Arg Gln Leu Gly Cys Gly Val Ala Ile Ser
275 280 285

Thr Pro Gly Gly Pro His Leu Val Glu Glu Gly Asp Gln Ile Leu Thr
290 295 300

Ala Arg Phe His Cys Ser Gly Ala Glu Ser Phe Leu Trp Ser Cys Pro
305 310 315 320

Val Thr Ala Leu Gly Gly Pro Asp Cys Ser His Gly Asn Thr Ala Ser
325 330 335

Val Ile Cys Ser Gly Asn Gln Ile Gln Val Leu Pro Gln Cys Asn Asp
340 345 350

Ser Val Ser Gln Pro Thr Gly Ser Ala Ala Ser Glu Asp Ser Ala Pro
355 360 365

Tyr Cys Ser Asp Ser Arg Gln Leu Arg Leu Val Asp Gly Gly Gly Pro
370 375 380

Cys Ala Gly Arg Val Glu Ile Leu Asp Gln Gly Ser Trp Gly Thr Ile
385 390 395 400

Cys Asp Asp Gly Trp Asp Leu Asp Asp Ala Arg Val Val Cys Arg Gln
405 410 415

Leu Gly Cys Gly Glu Ala Leu Asn Ala Thr Gly Ser Ala His Phe Gly
420 425 430

Ala Gly Ser Gly Pro Ile Trp Leu Asp Asn Leu Asn Cys Thr Gly Lys
435 440 445

Glu Ser His Val Trp Arg Cys Pro Ser Arg Gly Trp Gly Gln His Asn
450 455 460

Cys Arg His Lys Gln Asp Ala Gly Val Ile Cys Ser Glu Phe Leu Ala
465 470 475 480

Leu Arg Met Val Ser Glu Asp Gln Gln Cys Ala Gly Trp Leu Glu Val
485 490 495

Phe Tyr Asn Gly Thr Trp Gly Ser Val Cys Arg Asn Pro Met Glu Asp
500 505 510

Ile Thr Val Ser Thr Ile Cys Arg Gln Leu Gly Cys Gly Asp Ser Gly
515 520 525

Thr Leu Asn Ser Ser Val Ala Leu Arg Glu Gly Phe Arg Pro Gln Trp
530 535 540

Val Asp Arg Ile Gln Cys Arg Lys Thr Asp Thr Ser Leu Trp Gln Cys
545 550 555 560

Pro Ser Asp Pro Trp Asn Tyr Asn Ser Cys Ser Pro Lys Glu Glu Ala
565 570 575

Tyr Ile Trp Cys Ala Asp Ser Arg Gln Ile Arg Leu Val Asp Gly Gly
580 585 590

Gly Arg Cys Ser Gly Arg Val Glu Ile Leu Asp Gln Gly Ser Trp Gly
595 600 605

Thr Ile Cys Asp Asp Arg Trp Asp Leu Asp Asp Ala Arg Val Val Cys
610 615 620

Lys Gln Leu Gly Cys Gly Glu Ala Leu Asp Ala Thr Val Ser Ser Phe
625 630 635 640

Phe Gly Thr Gly Ser Gly Pro Ile Trp Leu Asp Glu Val Asn Cys Arg	645	650	655
Gly Glu Glu Ser Gln Val Trp Arg Cys Pro Ser Trp Gly Trp Arg Gln	660	665	670
His Asn Cys Asn His Gln Glu Asp Ala Gly Val Ile Cys Ser Gly Phe	675	680	685
Val Arg Leu Ala Gly Gly Asp Gly Pro Cys Ser Gly Arg Val Glu Val	690	695	700
His Ser Gly Glu Ala Trp Thr Pro Val Ser Asp Gly Asn Phe Thr Leu	705	710	715
Pro Thr Ala Gln Val Ile Cys Ala Glu Leu Gly Cys Gly Lys Ala Val	725	730	735
Ser Val Leu Gly His Met Pro Phe Arg Glu Ser Asp Gly Gln Val Trp	740	745	750
Ala Glu Glu Phe Arg Cys Asp Gly Gly Glu Pro Glu Leu Trp Ser Cys	755	760	765
Pro Arg Val Pro Cys Pro Gly Gly Thr Cys Leu His Ser Gly Ala Ala	770	775	780
Gln Val Val Cys Ser Val Tyr Thr Glu Val Gln Leu Met Lys Asn Gly	785	790	795
Thr Ser Gln Cys Glu Gly Gln Val Glu Met Lys Ile Ser Gly Arg Trp	805	810	815
Arg Ala Leu Cys Ala Ser His Trp Ser Leu Ala Asn Ala Asn Val Val	820	825	830
Cys Arg Gln Leu Gly Cys Gly Val Ala Ile Ser Thr Pro Arg Gly Pro	835	840	845
His Leu Val Glu Gly Gly Asp Gln Ile Ser Thr Ala Gln Phe His Cys	850	855	860
Ser Gly Ala Glu Ser Phe Leu Trp Ser Cys Pro Val Thr Ala Leu Gly	865	870	875
Gly Pro Asp Cys Ser His Gly Asn Thr Ala Ser Val Ile Cys Ser Gly	885	890	895

Asn His Thr Gln Val Leu Pro Gln Cys Asn Asp Phe Leu Ser Gln Pro
 900 905 910

Ala Gly Ser Ala Ala Ser Glu Glu Ser Ser Pro Tyr Cys Ser Asp Ser
 915 920 925

Arg Gln Leu Arg Leu Val Asp Gly Gly Gly Pro Cys Gly Gly Arg Val
 930 935 940

Glu Ile Leu Asp Gln Gly Ser Trp Gly Thr Ile Cys Asp Asp Asp Trp
 945 950 955 960

Asp Leu Asp Asp Ala Arg Val Val Cys Arg Gln Leu Gly Cys Gly Glu
 965 970 975

Ala Leu Asn Ala Thr Gly Ser Ala His Phe Gly Ala Gly Ser Gly Pro
 980 985 990

Ile Trp Leu Asp Asp Leu Asn Cys Thr Gly Lys Glu Ser His Val Trp
 995 1000 1005

Arg Cys Pro Ser Arg Gly Trp Gly Arg His Asp Cys Arg His Lys Glu
 1010 1015 1020

Asp Ala Gly Val Ile Cys Ser Glu Phe Leu Ala Leu Arg Met Val Ser
 1025 1030 1035 1040

Glu Asp Gln Gln Cys Ala Gly Trp Leu Glu Val Phe Tyr Asn Gly Thr
 1045 1050 1055

Trp Gly Ser Val Cys Arg Ser Pro Met Glu Asp Ile Thr Val Ser Val
 1060 1065 1070

Ile Cys Arg Gln Leu Gly Cys Gly Asp Ser Gly Ser Leu Asn Thr Ser
 1075 1080 1085

Val Gly Leu Arg Glu Gly Ser Arg Pro Arg Trp Val Asp Leu Ile Gln
 1090 1095 1100

Cys Arg Lys Met Asp Thr Ser Leu Trp Gln Cys Pro Ser Gly Pro Trp
 1105 1110 1115 1120

Lys Tyr Ser Ser Cys Ser Pro Lys Glu Glu Ala Tyr Ile Ser Cys Glu
 1125 1130 1135

Gly Arg Arg Pro Lys Ser Cys Pro Thr Ala Ala Ala Cys Thr Asp Arg
 1140 1145 1150

Glu Lys Leu Arg Leu Arg Gly Gly Asp Ser Glu Cys Ser Gly Arg Val
 1155 1160 1165

Glu Val Trp His Asn Gly Ser Trp Gly Thr Val Cys Asp Asp Ser Trp
 1170 1175 1180

Ser Leu Ala Glu Ala Glu Val Val Cys Gln Gln Leu Gly Cys Gly Gln
 1185 1190 1195 1200

Ala Leu Glu Ala Val Arg Ser Ala Ala Phe Gly Pro Gly Asn Gly Ser
 1205 1210 1215

Ile Trp Leu Asp Glu Val Gln Cys Gly Gly Arg Glu Ser Ser Leu Trp
 1220 1225 1230

Asp Cys Val Ala Glu Pro Trp Gly Gln Ser Asp Cys Lys His Glu Glu
 1235 1240 1245

Asp Ala Gly Val Arg Cys Ser Gly Val Arg Thr Thr Leu Pro Thr Thr
 1250 1255 1260

Thr Ala Gly Thr Arg Thr Thr Ser Asn Ser Leu Pro Gly Ile Phe Ser
 1265 1270 1275 1280

Leu Pro Gly Val Leu Cys Leu Ile Leu Gly Ser Leu Leu Phe Leu Val
 1285 1290 1295

Leu Val Ile Leu Val Thr Gln Leu Leu Arg Trp Arg Ala Glu Arg Arg
 1300 1305 1310

Ala Leu Ser Ser Tyr Glu Asp Ala Leu Ala Glu Ala Val Tyr Glu Glu
 1315 1320 1325

Leu Asp Tyr Leu Leu Thr Gln Lys Glu Gly Leu Gly Ser Pro Asp Gln
 1330 1335 1340

Met Thr Asp Val Pro Asp Glu Asn Tyr Asp Asp Ala Glu Glu Val Pro
 1345 1350 1355 1360

Val Pro Gly Thr Pro Ser Pro Ser Gln Gly Asn Glu Glu Glu Val Pro
 1365 1370 1375

Pro Glu Lys Glu Asp Gly Val Arg Ser Ser Gln Thr Gly Ser Phe Leu
 1380 1385 1390

Asn Phe Ser Arg Glu Ala Ala Asn Pro Gly Glu Gly Glu Glu Ser Phe
 1395 1400 1405

Trp Leu Leu Gln Gly Lys Lys Gly Asp Ala Gly Tyr Asp Asp Val Glu
 1410 1415 1420

Leu Ser Ala Leu Gly Thr Ser Pro Val Thr Phe Ser
 1425 1430 1435

<210> 79
 <211> 4308
 <212> DNA
 <213> Bos sp.

<400> 79

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